MYP by Concept

1–3

Design

Lenny Dutton



DYNAMIC LEARNING

HODDER EDUCATION

MYP *by Concept*

1–3

Design

Lenny Dutton

Series editor: Paul Morris

Boost

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How to use this book

Welcome to Hodder Education's *MYP by Concept* Series! Each chapter is designed to lead you through an *inquiry* into the concepts of design, and how they interact in real-life global contexts.

The *Statement of Inquiry* provides the framework for this inquiry, and the *Inquiry questions* then lead us through the exploration as they are developed through each chapter.

Each chapter is framed with a *key concept*, *related concept* and set in a *global context*.



KEY WORDS

Key words are included to give you access to vocabulary for the topic. **Glossary terms** are highlighted and, where applicable, **search terms** are given to encourage independent learning and research skills.

As you explore, activities suggest ways to learn through *action*.

ATL

Activities are designed to develop your *Approaches to Learning* (ATL) skills.

Definitions are included for important terms and information boxes are included to give background information, more detail and explanation.

Assessment opportunities in this chapter:

Some activities are *formative* as they allow you to practise certain parts of the MYP Design *Assessment Objectives*. Other activities can be used by you or your teachers to assess your achievement *summatively* against all parts of an assessment objective.

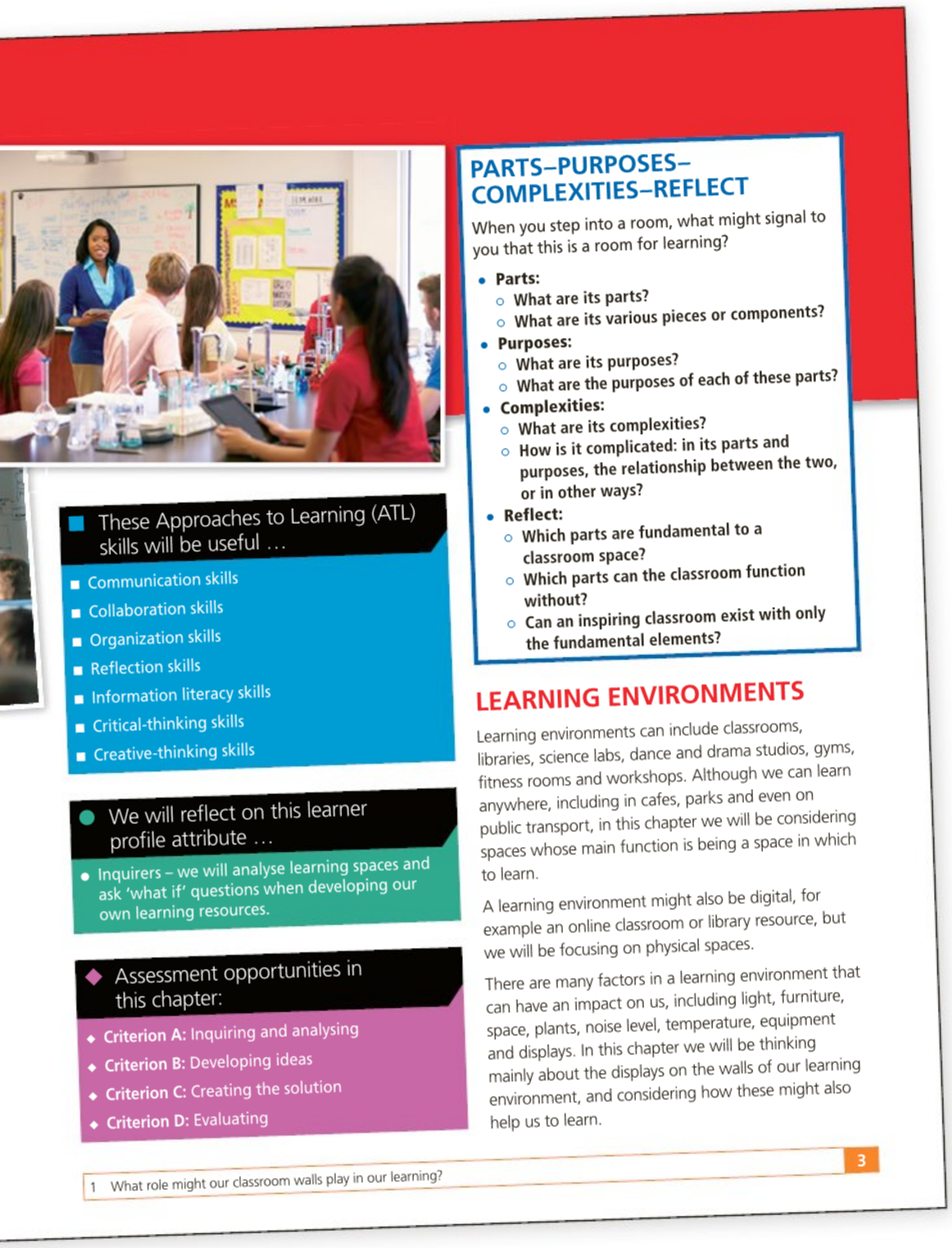
Key *Approaches to Learning* skills for MYP Design are highlighted whenever we encounter them.

Hint

In some of the activities, we provide hints to help you work on the assignment. This also introduces you to the new Hint feature in the on-screen assessment.

EXTENSION

Extension activities allow you to explore a topic further.



■ These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Organization skills
- Reflection skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills

● We will reflect on this learner profile attribute …

- Inquirers – we will analyse learning spaces and ask 'what if' questions when developing our own learning resources.

◆ Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

PARTS–PURPOSES–COMPLEXITIES–REFLECT

When you step into a room, what might signal to you that this is a room for learning?

- **Parts:**
  - What are its parts?
  - What are its various pieces or components?
- **Purposes:**
  - What are its purposes?
  - What are the purposes of each of these parts?
- **Complexities:**
  - What are its complexities?
  - How is it complicated: in its parts and purposes, the relationship between the two, or in other ways?
- **Reflect:**
  - Which parts are fundamental to a classroom space?
  - Which parts can the classroom function without?
  - Can an inspiring classroom exist with only the fundamental elements?

LEARNING ENVIRONMENTS

Learning environments can include classrooms, libraries, science labs, dance and drama studios, gyms, fitness rooms and workshops. Although we can learn anywhere, including in cafes, parks and even on public transport, in this chapter we will be considering spaces whose main function is being a space in which to learn.

A learning environment might also be digital, for example an online classroom or library resource, but we will be focusing on physical spaces.

There are many factors in a learning environment that can have an impact on us, including light, furniture, space, plants, noise level, temperature, equipment and displays. In this chapter we will be thinking mainly about the displays on the walls of our learning environment, and considering how these might also help us to learn.

1 What role might our classroom walls play in our learning? 3

You are prompted to consider your conceptual understanding in a variety of activities throughout each chapter.

We have incorporated Visible Thinking – ideas, framework, protocol and thinking routines – from Project Zero at the Harvard Graduate School of Education into many of our activities.

▼ Links to:

Like any other subject, Design is just one part of our bigger picture of the world. Links to other subjects are discussed.

● We will reflect on this learner profile attribute …

- Each chapter has an *IB learner profile* attribute as its theme, and you are encouraged to reflect on these too.

Finally, at the end of the chapter you are asked to reflect back on what you have learnt with our *Reflection table*, maybe to think of new questions brought to light by your learning.

Use this table to evaluate and reflect on your own learning in this chapter.

Questions we asked	**Answers we found**	**Any further questions now?**
Factual		
Conceptual		
Debatable		

Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Learner profile attribute	Reflect on the importance of the attribute for your learning in this chapter.				

! Take action

! Guidance is given throughout the book about how to apply your knowledge of the design process to real-life situations. While the book provides many opportunities to apply the knowledge you have learnt in practical ways, you must be an active part in this process. Activities help you to **explain** the ways in which design can be applied and used, and also to discuss and **evaluate** the implications of using the principles of design to address specific issues. This should give you a better understanding of the issues facing designers in the twenty-first century. By engaging in these activities, you will also learn the value of communicating clearly and precisely.

1 What role might our classroom walls play in our learning?

We must **evaluate** the **role** played by individual parts of the **systems** we **belong** to, if we hope to **improve** them.

CONSIDER THESE QUESTIONS:

Factual: What is the third teacher? What posters exist in our current learning environment? How do we use our classroom posters?

Conceptual: How might the appearance of the space we learn in change the way we learn? How do visuals help us learn?

Debatable: Does an effective learning environment need effective displays?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.



■ **Figure 1.1** How do posters enhance learning?

KEY WORDS

copy
learning environments
typography

IN THIS CHAPTER WE WILL …

- **Find out** how our learning environments impact us.
- **Explore** examples of different learning environments.
- **Take action** by improving a learning space in our school.



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- Collaboration skills
- Organization skills
- Reflection skills
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- Critical-thinking skills
- Creative-thinking skills

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LEARNING ENVIRONMENTS

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What is the third teacher?

THE THIRD TEACHER

> *'There are three teachers of children: adults, other children, and their physical environment.' – Loris Malaguzzi*

The 'third teacher' is the idea that the environment we learn in can have an impact on our learning. This covers everything from how a room makes you feel (cosy, alert, inspired) through to the resources in the room that help you to learn (posters, furniture, reading books and so on).

When you think about the influence an environment can have on learning, think about the values that the environment shows the users of the space. Examples might include:

- The furniture arrangement is set up for group work.
- The posters give prompts to help students ask questions and foster inquiry.
- The displays show examples of students' work, focusing on student growth.
- The room contains a 'shout-out' wall, where students can recognize their classmates for being kind, helpful or inspiring.

In this chapter you will have a real impact on a learning environment that you use by creating a poster/display to improve the space. You could design anything from an illustrated science lab safety guide to a display of motivational quotes for a fitness studio. You will be taking on the role of graphic designer here, but you could also approach this chapter as an interior, product or furniture designer.

Design situation

Your school has decided to update some of its classrooms and has asked the students to help. The school wants to redesign its displays to transform the learning environments; the budget is zero.

You should choose a learning space and work with the different users of that space (teachers and students) to design posters to enhance learning.

- **Client:** for this project, your **client** is the teacher or the school's leadership.
- **Target audience:** for this project, your **target audience** are the learners in the room, most likely students.

Identifying a problem

At the beginning of every design project, you need to **identify** a problem to solve. A lot of the time, the problem will be identified by the client. Your job is to really understand the problem and, then, to **explain** and **justify** the need for a solution to it.

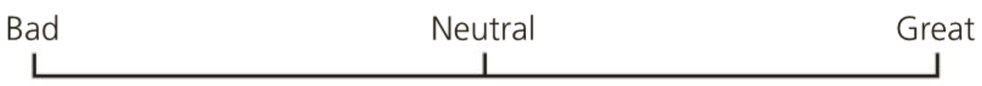
In order to find a solution, you need to do some research to learn more about the problem and its possible solutions. You can do this in a number of ways, including looking at books, newspapers, websites, interviews, or even testing a product, carrying out user surveys or visiting a location.

LEARNING CONDITIONS

DISCUSS

Think about this quote from Albert Einstein. What does it mean to you?

Think about all the learning environments in your school and plot them on to a copy of the following graph:

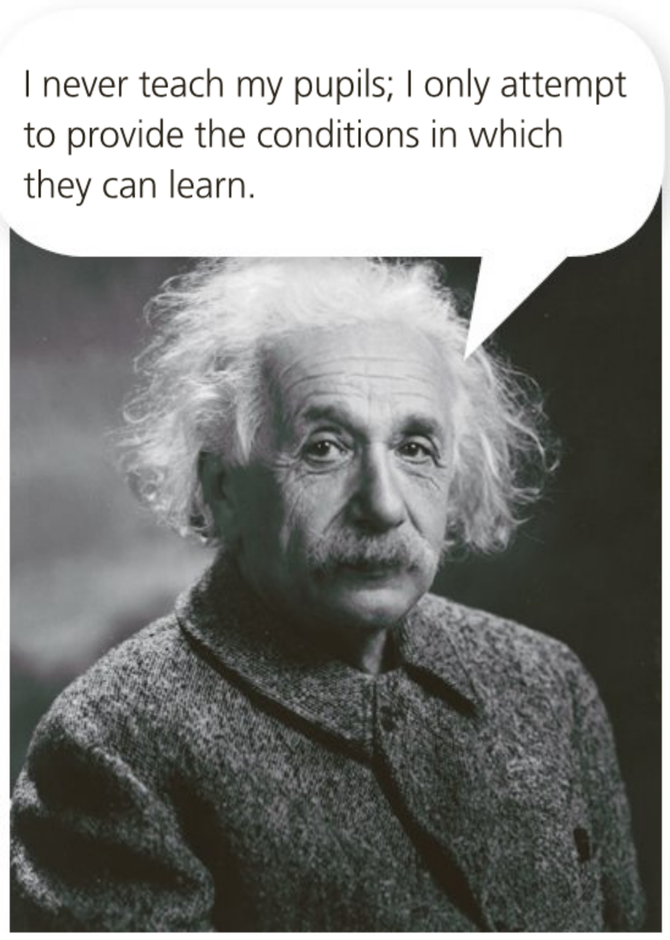


■ **Figure 1.2** How good or bad are your learning environments?

Show your graph to a classmate. Do your graphs look similar?

Discuss the following questions:

- **How did you determine what makes a good or a bad learning environment?**
- **How does it feel when you are in an environment with good/bad conditions for learning?**
- **What role did classroom displays/posters play in creating a successful learning environment?**



■ **Figure 1.3** Albert Einstein

THINK–PAIR–SHARE

In pairs, read the following quotes and discuss what each one means to you:

> 'Look at your learning space with twenty-first century eyes: Does it work for what we know about learning today, or just for what we know about learning in the past?' – Sir Ken Robinson, cited in *The Third Teacher* (2010)

> 'Classrooms are as individual as homes. Although there is no single way they must look, we want our homes to be functional, to work for the activities we conduct in them, and to be comfortable and inviting to those we welcome in.' – Ron Ritchhart, *Creating Cultures of Thinking* (2015)

> 'Our environments have a great influence on how we feel and behave and what we pay attention to.' – Deb Curtis and Margie Carter, *Reflecting Children's Lives: A handbook for planning your child-centered curriculum* (2011)

> 'We are not decorating learning spaces. We are designing them to amplify learning.' – Rebecca Louise Hare and Robert Dillion, *The Space: A guide for educators* (2016)

Share your comments with another pair.

How do we use our classroom posters?

DISCUSS

Before we dive into locating a problem to solve, think about your dream learning environment. What would it include? What would it not include? How would you feel while using the space?

You might want to think about light, furniture, room size, displays, technology and plants, as well as equipment.

You could refer to the Parts–Purposes–Complexities–Reflect activity on page 3 to help you add detail to your vision for a dream learning environment.

Research

ATL

- Information literacy skills: Access information to be informed and inform others

The next step in the design cycle requires you to conduct further research. This helps you to better understand the problem, the user/target audience, and might even give you some inspiration for a solution. Although designers sometimes have an idea for what they want to make as soon as they hear the design situation, it is best to carry out research so that your final product best suits the client, environment and situation.

Designers often **create** a research table that includes the questions they want to solve; where they hope to find the answers, for example a particular website or person; and their priority for answering the questions ('high to low' or 'need to know, to want to know'). MYP 2–3 designers should add a column to identify whether their research is from a **primary** or **secondary source**.

Primary vs secondary sources

- A **primary source** is a first-hand or eyewitness account of information by an individual close to the topic. Examples of primary sources include autobiographies, personal correspondence (for example diary entries and letters), government documents, works of art and literature, statistics and data, and newspaper articles written by reporters close to the source. Today, even some social media posts are considered primary sources, because they are first-hand accounts of information.
- A **secondary source** is a source that is more removed from an event, usually written after the event has happened. Examples of secondary sources include biographies, interpretation of statistics and data, and anything written after an historical event or analysing something that already happened (for example, examining a work of art from a hundred years ago).

In this chapter and design problem, you will mainly be using primary sources, as you will be visiting the learning environments personally, photographing the actual rooms and interviewing the current users.

If you do any additional research about learning environments, maybe through books or online, this will most likely be a secondary source.

Links to: Individuals and societies; History

How do you differentiate between primary and secondary sources in your Individuals and societies classes? How is this similar and different in Design?

ACTIVITY: Research learning environments

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

Data usually refers to facts and statistics but, for designers, it often means photographs. For this project, start your research by taking photographs of some of the learning environments in your school.

- **Think about which rooms have the potential to improve or that you don't like learning in. Identify spaces that you feel do not best support learning, visit them and take photographs. You will start off by looking at several learning environments and later on will select just one.**
- **Reflect on the rooms and annotate your photographs to show potential problems. The problems could include: empty wall space, posters with writing that is too small to read, damaged/old/broken displays, boring displays and so on.**

Whenever you are identifying a problem, you should be able to answer the questions in Table 1.1.

What is the problem?	Identify which learning environments you are looking at and why.
Whose problem is it?	Identify the client/target market – who uses these learning environments? Teachers and/or students?
Where is the problem occurring?	Identify the situation – where are these rooms and what are they used for? An example might be 'room 120, science lab'.
What is the cause of the problem?	Use your annotated photographs or learning graph to identify the cause of the problem.
What effect is it having?	How are the rooms impacting learning?

Table 1.1 Identifying problems

You might have to do a little extra research to answer these questions. Find out exactly who uses the rooms; you might want to gather some feedback from those users too. You could use the graph you created in the Learning conditions activity on page 5 to further **justify** your answers.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).



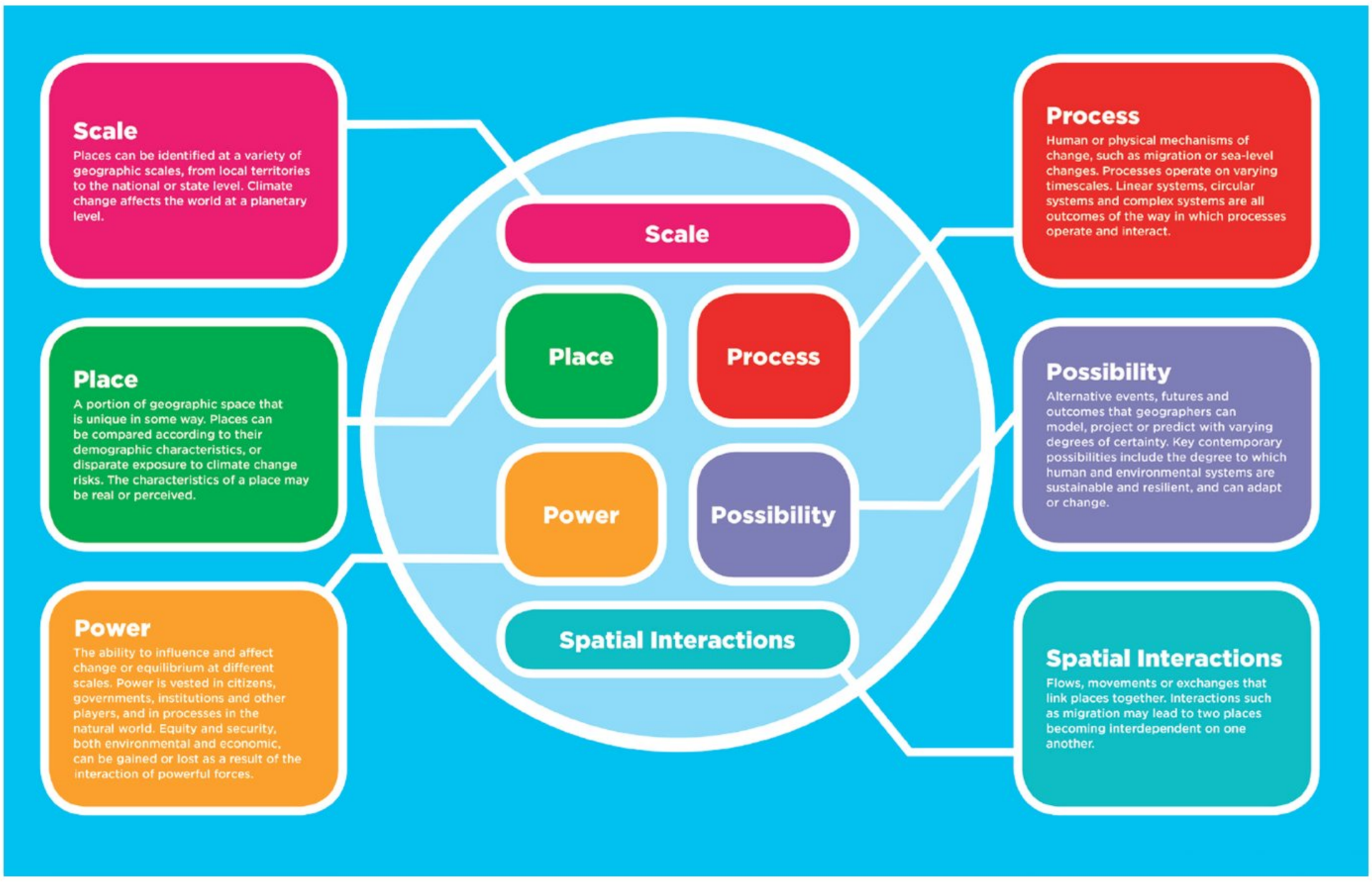


Figure 1.4 Examples of classroom posters: (a) IB Geography: Making sense of the world, (b) PPPPSS Concepts

ACTIVITY: Digging deeper

ATL

- Information literacy skills: Access information to be informed and inform others

For this chapter and design problem, you will be doing some user research. This means you will interview some people who use the rooms you photographed. You might want to ask them questions about their views on the current rooms, especially the posters and displays, and also how they would like to improve the rooms.

Copy Table 1.2, adding in ten interview questions, then interview at least three people.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii).

Question	Source	Priority	Answer
Example: *How often do you use the current posters to enhance learning?*	Example: *Mr Smith, Grade 8B students*	Example: *High*	Examples: *Mr Smith: 'I often point out the design cycle poster during class.'* *Student 1: 'I don't think I ever look at the displays.'* *Student 2: 'I sometimes look at the IB learner profile poster when we are reflecting on our learning.'*

Table 1.2 Interview template

ACTIVITY: Poster pros and cons

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

Make a two-column pros and cons list, like the example shown in Table 1.3.

You might also do this analysis exercise for the posters in your learning environment.

Analyse existing products

Before generating new ideas, designers always **analyse** existing products.

What do you like and dislike about the posters shown on these pages?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Pros	Cons
Example: *The text is easy to read.*	Example: *The poster is not colourful.*

Table 1.3 A list of pros and cons

How might the appearance of the space we learn in change the way we learn?

WHAT POSTERS EXIST IN OUR CURRENT LEARNING ENVIRONMENT?

The types of posters that you would normally find in a learning environment include:

- motivational quotes
- rules, graphs, diagrams, prompts, formulae
- Approaches to Learning (ATLs)
- global contexts
- command terms
- key concepts
- related concepts
- IB learner profile
- subject terminology
- unit overviews
- guiding questions
- unit-/topic-specific information, values, activities, guides.

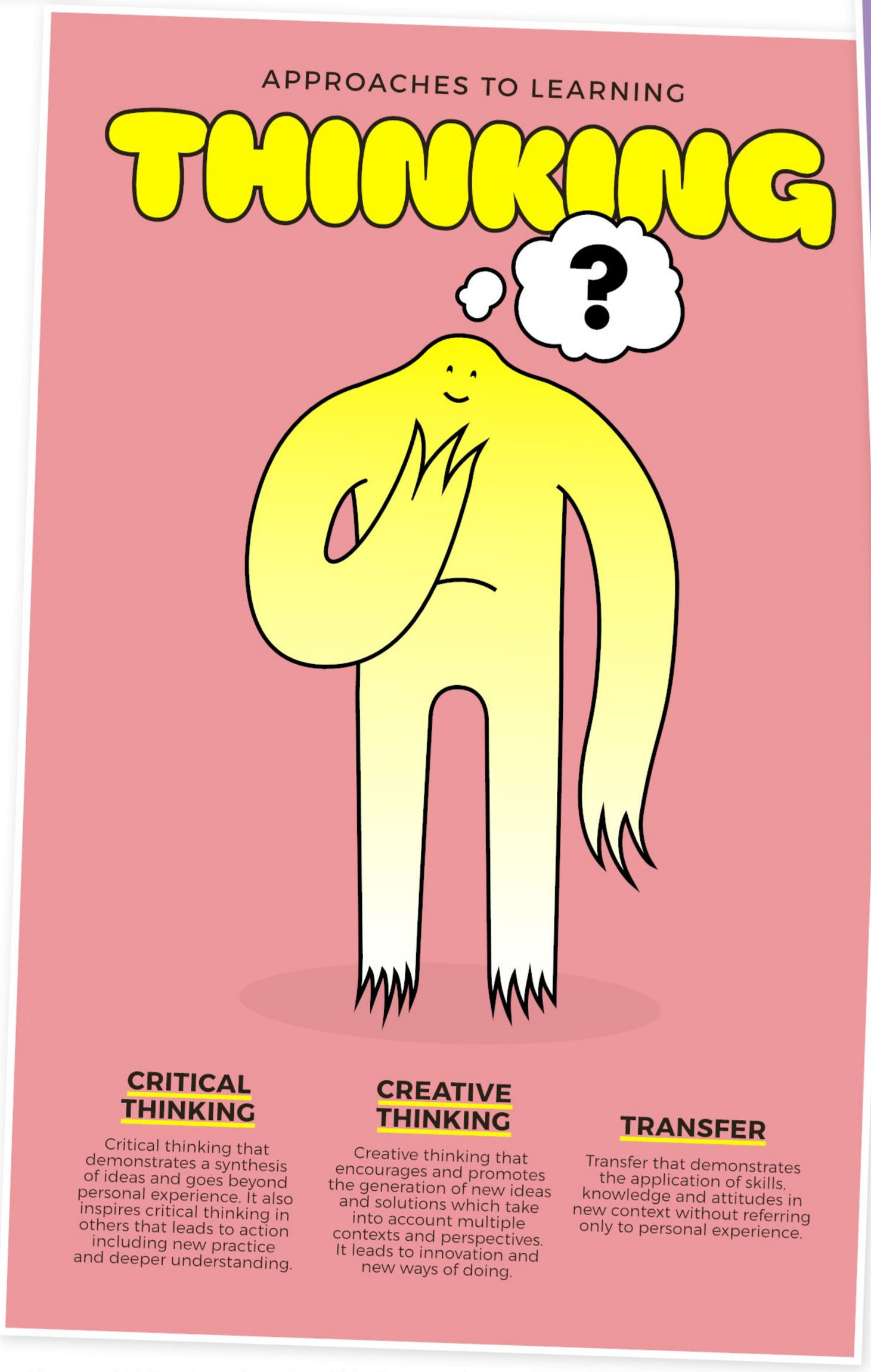
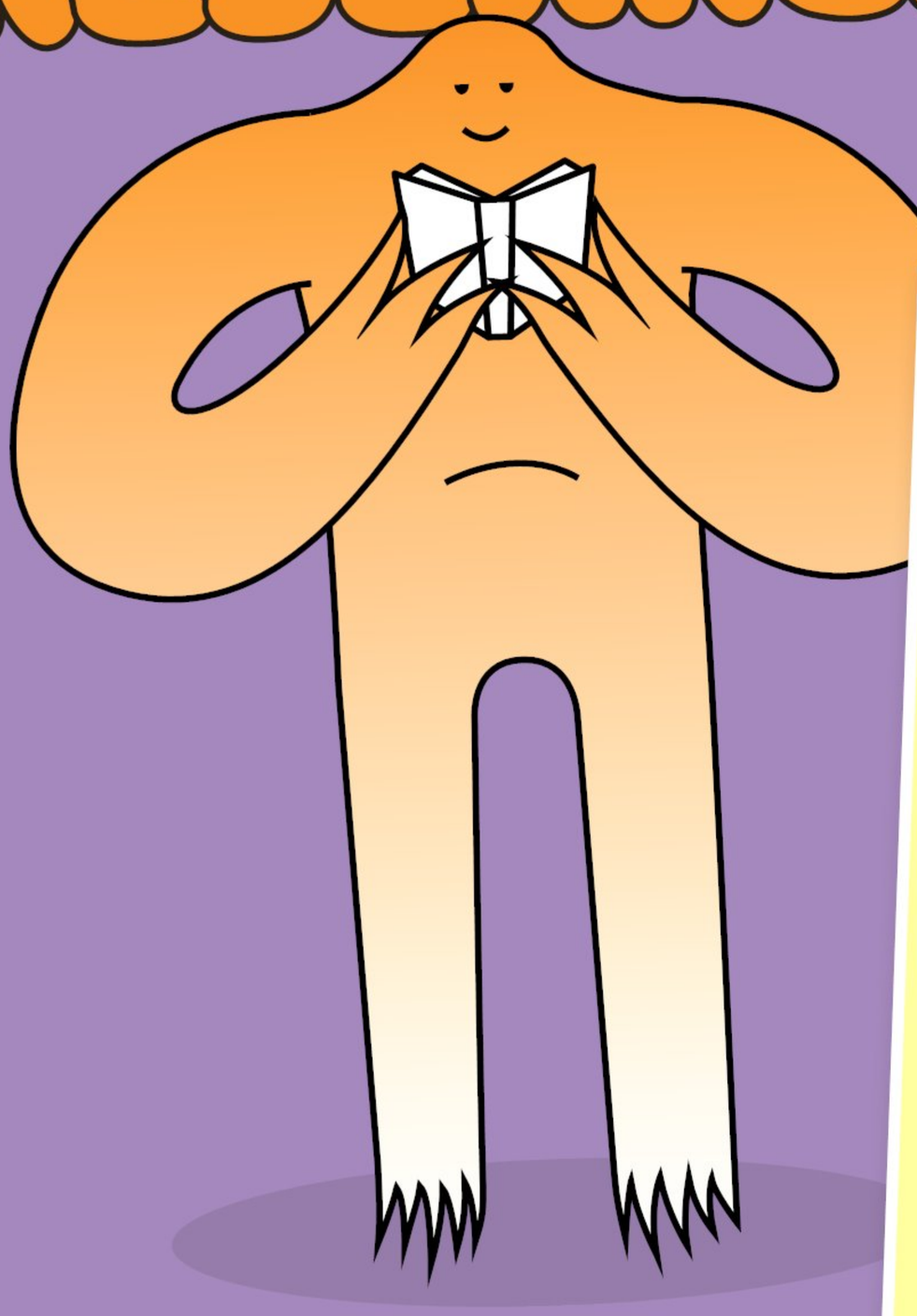


Figure 1.5 Posters showing IB's Approaches to Learning

APPROACHES TO LEARNING

RESEARCH

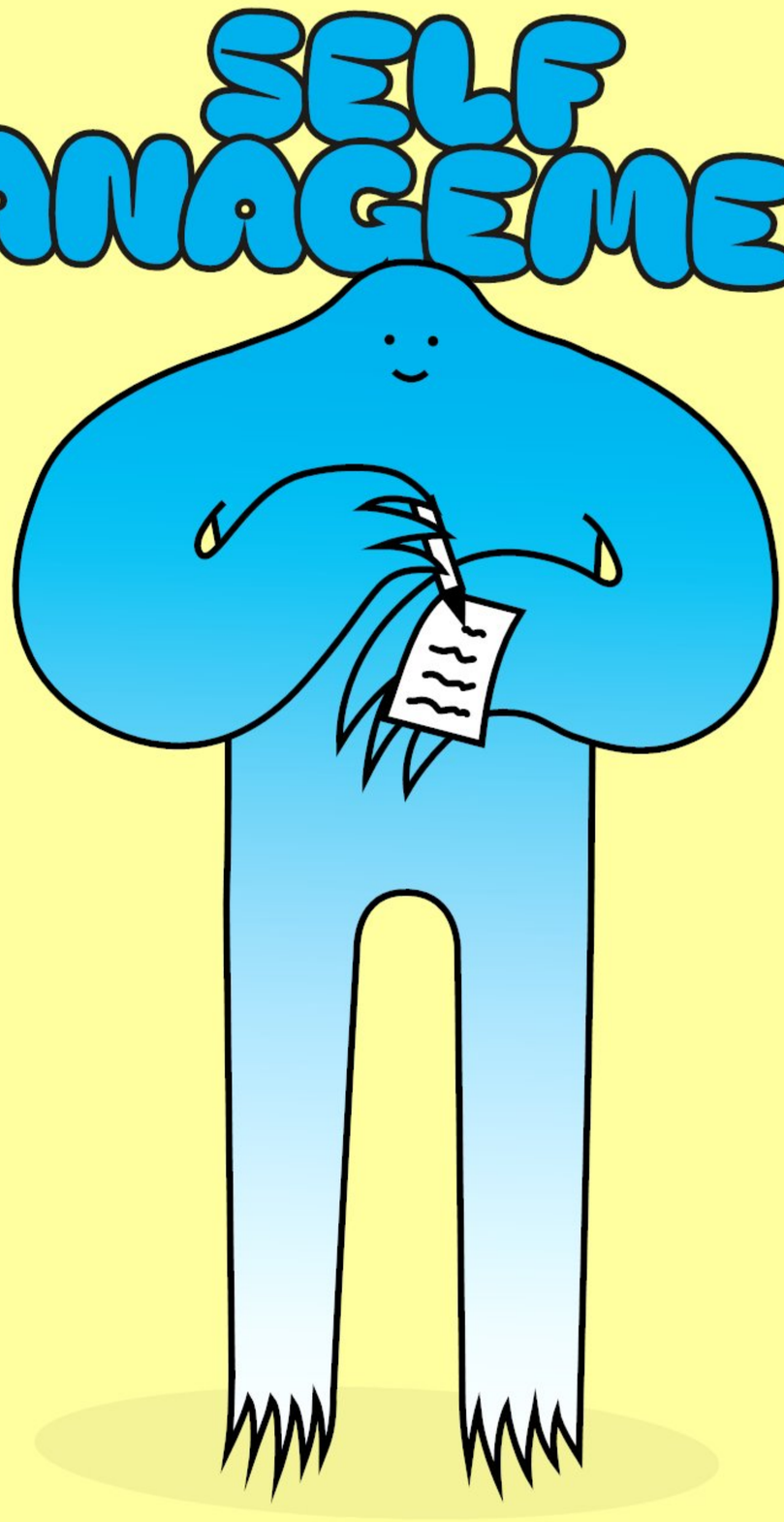


INFORMATION & MEDIA LITERACY

Information and media literacy is used with ease in a variety of modes to consult, coach and collaborate with stakeholders.

APPROACHES TO LEARNING

SELF MANAGEMENT



ORGANIZATION

Organization that inspires confidence by demonstrating preparedness, management, prioritization, and clarity. It is used to model processes and structures.

AFFECTIVE SKILLS

Affective skills that demonstrate an engaging, positive, empathetic attitude. Diplomatic responses and solutions are shared indicating integrity, presence, problem solving and agility which builds respect and understanding.

REFLECTION

Reflection that demonstrates both personal and situational consideration exhibited in informed decisions, refinement of practices and initiative to improve and gain a deeper understanding of self. It is used to build confidence and encourage thoughtful risk-taking.

ACTIVITY: Learning environment NOISE

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

Now that you have done lots of initial research, it is time to select just one learning environment to improve.

Take several photographs of it in its current state. Using your previous research, complete a NOISE **analysis** of the space, then label the photographs with the responses and your own analysis.

You could use this activity to **explain** the problem you are going to solve, for your initial research and when **analysing** existing solutions.

NOISE analysis		Responses/analysis
Needs	What are the needs of the space? What subjects and topics are taught in the space? What IB information needs to be shared with the learners (for example, command terms, global contexts, and so on)?	
Opportunities	What wall space could be changed? What wall space is not currently being used?	
Improvements	How could the learning environment better support all learners?	
Strengths	What do the users like about the current situation? What about the classroom currently helps learners?	
Exceptions	What cannot be changed?	

Table 1.4 NOISE analysis

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i, ii and iii).

CREATIVE QUESTIONS

Use the following questions to generate ideas for improving the learning space:

- **What would it be like if …**
- **How would it be different if …**
- **Suppose that …**
- **What would change if …**
- **How would it look differently if …**

Once you've answered the questions, choose one answer that stands out to you and brainstorm it. Get visual – add sketches and symbols.

Now, look at your thinking. What ideas do you have for improving the learning environment? Write your ideas as a design brief, pitched at the users of the space. You can refer to the guidance on design briefs below.

Design brief

The design brief is your response to the design situation. It summarizes the relevant findings from your research and details how you intend to solve the problem. The design brief informs the development of the design **specification**.

You should **identify** the problem you are trying to solve in your design brief, and then **describe** how you will solve it. You should **summarize** the research you have already done, in your own words, to support your design brief.

Designers often use design briefs as a **pitch**. A pitch is when you **present** your ideas to a client. As well as being clear and concise, you could use persuasive language to persuade someone to choose your design.

ACTIVITY: The design brief

ATL

- Information literacy skills: Make connections between various sources of information

Now that you have conducted your initial research, it is time to write the design brief. This is the important last step of Criterion A: Inquiring and analysing (iv):

- **present the main findings of relevant research (MYP 1)**
- **develop a design brief, which presents the analysis of relevant research (MYP 2–3).**

Imagine that you are a designer from outside of the school and you, along with ten other designers, are pitching your idea to the principal or director of your school. You need to show that you understand the problem clearly and that you have ideas to solve it. You should be clear and concise. You might want to use some persuasive language to encourage the principal or director to choose your design brief.

Write your design brief clearly in one paragraph. Share it with users of the learning environment that you hope to improve.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

How do visuals help us learn?

When you **create** your design specifications, you are creating a detailed contract with promises to the client for whom you are designing. The specifications are also useful to help you develop your designs and to assess their success later.

In general, when creating specifications you might include the following: **aesthetics**, cost, quality, client/target audience, environment, material, safety, size, text, information and function. For this project, you will focus on function, aesthetic, size and text.

Table 1.5 outlines some questions that will help you to **create** your specifications. You may need to add other types of specification too. As you become more familiar with creating specifications, you will have more specification types, and you can ask your own questions about the product too.

The final column in the table is about testing methods. We discuss this further in the **evaluating** section of the design cycle (see page 22).

Design specification

A design specification is a detailed description of the conditions, requirements and restrictions with which a design must comply. It is a precise and accurate list of facts, such as conditions, dimensions, materials, processes and methods, that are important for the designer and for the user. All appropriate solutions will need to comply with the design specification.

Specification type	Questions to ask	Specification for product	Reason	Testing method
Aesthetic	How will your product look and 'feel'?			
Function	What is the main purpose of your product?			
Cost/quality	What will it cost? What finish do you need?			
Material	What type of material will you use?			
Safety	Does it need to meet safety regulations/ requirements?			
Size	What size will it be?			

Table 1.5 Questions to ask when creating design specifications

ACTIVITY: Poster specifications

ATL

- Organization skills: Set goals that are challenging and realistic

Create specifications for your poster(s). Copy and complete Table 1.6 below to help you get started; you may need to add other types of specifications too.

The final column is about testing methods – leave this blank for now. We will come back to it when we move on to the **evaluating** section of the design cycle (see page 22).

Specification type	Questions to ask	Specification for poster(s)	Reasons	Testing methods
Function	What is the main purpose of your poster(s)?	Example: *The poster will teach MYP 1 students about lab safety.*	Example: *Students cannot conduct experiments before they know the safety rules. Following these rules will keep students safe.*	
Aesthetic	What will the style of the poster be? What colours will you use? What type of image will appear on your poster? How will the image be made?			
Size	What size will your poster be printed at? What size font will you use?			
Text	What text *must* appear on your poster?			

Table 1.6 Design specifications for poster(s)

Share your specifications with your client/target audience and get their approval before you start **sketching** out ideas.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

ACTIVITY: Initial sketches

ATL

- Critical-thinking skills: Propose and evaluate a variety of solutions

Now that your specifications have been approved, you can start to sketch out different ideas for your poster. Although you might already have one strong idea in mind, it is best to sketch out a few different ideas so that you can gather feedback from your client/target audience, and also because you might find new ideas yourself.

You could use a HB pencil and ruler to **create** your initial sketches, showing your ideas for images and layout. You could also create these digitally, or even show your ideas using a collage.

These are just rough ideas at this stage, but they should contain annotations and be clear enough for someone else to understand them. If you are doing this without colour, you should add labels with the colour names. Look through your specifications to make sure your ideas meet the agreements you laid out.

You could also **create** a **mood board** to help the user understand your ideas. A mood board is a bit like a bulletin board full of ideas and inspiration. You might gather samples of the colours you want to use, examples of similar posters, ideas for the images and text you want to use, and more.

Try to create at least three different initial sketches. You should then share your sketches with your client/target audience before selecting one to develop further.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

DISCUSS

On posters, there is copy and typography. Copy is the exact words you will use on your poster; typography is how the words will look – the font, text size and colours used.

Both aspects need to be thought through as they both impact each other. There is no point having clear and concise copy in a font you can't read, and there is no point having amazing typography but with confusing words!

Why do fonts matter? Look at the two posters in Figure 1.6. Why do you think the choice of fonts used matters?



Figure 1.6 Fonts matter

Just for fun, try using different typography to change the meaning of one of the following phrases:

- **I think you forgot something.**
- **Let's stay here forever.**
- **Then we saw the house on the hill.**
- **It was a day we would never forget.**
- **I've been watching you from afar.**

ACTIVITY: Which poster should you develop further?

ATL

- Communication skills: Organize and depict information logically

Next you have to decide which poster you will actually **create**. This should not just be the idea you like the most. It should be the idea that fits your specifications best and which your client/target audience likes the most.

As you have already agreed on very specific details with your clients in your specifications, you may want to gather simple feedback by asking the target audience to vote on the poster(s) they like best. You could also ask more specific questions, for example about the colours, images or font sizes they like best.

Based on the feedback, decide which poster(s) you will develop further and **explain** your choice clearly. There are a number of ways you could do this, depending on the way you gathered feedback. If you gathered feedback through a simple vote, you could show which poster received the most votes and **analyse** why you think it did. If you are focusing more on specifications, you could create a table that shows which poster met which specification, as shown in Table 1.7.

	Poster 1	Poster 2	Poster 3	Poster 4
The poster will be black and yellow	X	X		X
The poster will be easy to read from anywhere in the room	X			
The poster will include the school name	X	X	X	X
The poster will include clear icons	X	X		
Total	**4**	**3**	**1**	**2**
I am choosing to develop poster 1, as this met the most specifications. When sketching out my ideas I thought that all of them would be easy to read from anywhere in the science lab, but posters 2 and 3 had too much text, and in poster 4 the text was too small because the image was large and complex.				

Table 1.7 Feedback and analysis

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iii).

1 Think about the audience



2 Make sure the poster can be read from a distance

3 **Use contrasting colours**

4 **Use bold typography**

5 Use a large imag



6 Don't make the poster too *buSy*

7 Make sure the main message can be understood quickly



8 Delete anything unnecessary ~~delete~~

9 Think about where the poster will be displayed



10 Focus on the purpose of the poster – how does it help people learn?



■ **Figure 1.7** Top tips for classroom posters

ACTIVITY: Detailed drawing

■ ATL

- Communication skills: Organize and depict information logically

Before you start making your final poster, you should **create** a detailed drawing. This drawing should include the exact copy (text) you will use, the colours, the spacing and measurements, and the images.

This detailed sketch should be labelled with enough information for someone else to be able to create your final poster easily. Make sure that you colour in the sketch too. When you have made your final image, you will compare it to your sketch.

◆ Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iv).

CREATING THE SOLUTION

ACTIVITY: Creating a step-by-step plan

ATL

- Organization skills: Plan strategies and take action to achieve personal and academic goals

Before making your final poster, it is important to **create** a plan. Designers do this so that they have clear steps to follow, don't miss any steps out and, if anything goes wrong, they can locate where and why.

In a big company, one designer might be responsible for making the plan, while another designer might actually make the product. This means that plans need to be clear enough for someone else to follow. There are many ways you can create a clear plan, including flow charts, Gantt charts, slippage charts, lists, tables and more. We will explore these further throughout the book.

For this chapter, you need to create a simple step-by-step plan that considers the processes, tools and materials, and time needed to complete it.

Copy Table 1.8 and fill it in with your logical plan.

Step	Process	Tools/ material	Time to complete
1			
2			
3			
4			
5			

Table 1.8 Step-by-step design plan template

Table 1.9 gives an example of how you might complete the table.

Step	Process	Tools/ material	Time to complete
1	Open a new document in Adobe Illustrator. The document should be 297 × 210 mm.	Adobe Illustrator	2 minutes
2	Create the title of the image 'IB Learner Profile' by clicking on the Type Tool icon.	Adobe Illustrator	2 minutes
3	Change the font to Chalkduster, the size to 36 pt, and centre align the text.	Adobe Illustrator	2 minutes

Table 1.9 Step-by-step design plan example

To make sure that your plan is clear, ask yourself the following questions:

- **Is the plan logical?**
- **Does the plan use clear vocabulary, including software-specific words (for example the name of the tools you will use)?**
- **Does the plan allow enough time for the product to be completed? Is there flexibility in case something unexpected happens? Is there enough time to master this software if it is new to the user?**
- **Does the plan describe every step needed to create the solution?**

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

Software

There are many resources available that you could use to **create** your poster. Some resources are free, and some cost money. Your teacher will let you know which software is available in your school.

Software you might use to create your poster includes:

- Adobe Illustrator
- Adobe Photoshop
- Affinity Designer
- CorelDRAW
- GIMP
- Gravit Designer
- Inkscape
- Krita
- Paint.NET
- Pixlr
- Procreate
- Vectr.

ACTIVITY: Technical skills champion

ATL

- Communication skills: Organize and depict information logically

Part of the design cycle requires the designer to show off their excellent technical skills. For this graphic design project, you should take screenshots to show the different stages of creating the product.

You should include screenshots that show a range of tools being used, as well as how complex the project is. For example, in Adobe Illustrator you might show the use of different tools, such as the curvature tool and the eye-dropper tool, as well as a screenshot showing all your **layers**.

Alternatively, you could make a video to show how you have used these skills. For a project like this, you could record the whole process from start to finish, sped up, with text or audio describing the technical skills.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii).

ACTIVITY: The final poster

ATL

- Communication skills: Organize and depict information logically

Make sure you include an image of your final poster. It should be a **high-resolution** poster, at a large enough size to see all the details that you have added to it. You might want to take photographs of the poster displayed in the classrooms you have designed it for. By photographing the poster from different places in each classroom, you can show how effective it would be for those sitting in each place.

If you made any changes from your original sketch or your logical plan, **explain** why you did this. Describe how the changes either improved your process (for example, made it easier or quicker) or improved the overall poster design (for example, made the text easier to see).

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (iii and iv).

Does an effective learning environment need effective displays?

EVALUATING

ACTIVITY: Designing testing methods

ATL

- Critical-thinking skills: Consider ideas from multiple perspectives

Go back to the specifications that you made for your poster. You should have left a column blank for your testing methods. In this column, you should **describe** how you will test each specification. Remember that your tests will need to be **authentic** (relevant to the project).

A designer should never **evaluate** their own products without getting feedback from others. Examples of how you might test the products and get feedback include:

- **Expert appraisal: feedback from your design teacher or another design specialist.**
- **Field test: put the poster in the learning environment and see if it 'works'; for example, can the students read the text?**
- **Performance test: put the poster up in the learning environment and test how it is used to enhance learning; for example, if the poster was about lab safety, you could test students' knowledge of lab safety before and after the poster is displayed.**
- **User trial: you could send a survey out to the users (teachers and/or students) of the learning environment to gather their feedback.**

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i).

ACTIVITY: Success

ATL

- Critical-thinking skills: Revise understanding based on new information and evidence

Use the data gathered from your testing methods to **outline** the success of the product. Although you may have had strong ideas about the strengths and weaknesses of your product, you should re-evaluate this based on the results of your testing.

You might choose to do this by adding an additional column to your specifications to say which were met, partially met or not met.

You might also include some quotes from your client/target audience to show the success of the product.

Analyse your poster(s) using the results, as well as measuring the posters against your original specifications. What was successful about the poster(s)? What could be improved? What was the impact on the learner and the learning environment?

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (ii).

ACTIVITY: … and next time?

ATL

- Reflection skills: Identify strengths and weaknesses of personal learning strategies (self-assessment)

Now, think about how you could improve your posters. Even if you met all of your specifications, how could you make your design even better? Are there any new specifications you would include or any new details you would add?

You can also imagine that you are going to make a series of posters to accompany this one. How will you make them all amazing?

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (iii).

ACTIVITY: Big impact

ATL

- Collaboration skills: Help others to succeed

Using the data collected in your testing methods, **describe** the impact your posters have had on the target audience.

What future impact could they have if, for example, the posters are up longer or used in other, similar learning spaces? How will the posters help your classmates succeed in the MYP?

For this activity, think about the inquiry question: **Does an effective learning environment need effective displays?**

Provide evidence to show how your posters have enhanced the learning environment.

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (iv).

! Take action

! Now that you have seen the impact that a learning environment can have on a learner, you might choose to take further action.

! Possible long-term projects include:

- **Create** a series of posters for different learning environments.
- **Create** a group of volunteers to work on improving your school's learning environments:
  - a group of poster designers
  - a group that creates displays for the learning environments
  - a group that thinks about other aspects of learning environments, for example furniture.
- Work with the school's leadership to **create** agreements on how learning environments should look.
- Design more posters for your learning environments, but share them so that other schools can use them too.
- Use the design principles you have learnt in this chapter to design posters for other uses, for example to raise awareness of an issue you care about, to raise money for a charity you support, to promote a school club that you belong to, or to encourage people to recycle more in school.

EXTENSION

Now that you have made posters to help your classmates with their learning, what other things could you do? Are there other activities you could do as an individual, such as helping a classmate understand a task in class? What about actions you could take as a designer? What other products could you make to support student learning in your school? You could make tutorials, animations, videos, notebooks, pencil cases and more!

Reflection

In this chapter we have found out how our learning environments can have an impact on us. We explored different learning spaces and we took action by improving a learning space in our school.

Use this table to evaluate and reflect on your own learning in this chapter.		
Questions we asked	**Answers we found**	**Any further questions now?**
Factual: What is the third teacher? What posters exist in our current learning environment? How do we use our classroom posters?		
Conceptual: How might the appearance of the space we learn in change the way we learn? How do visuals help us learn?		
Debatable: Does an effective learning environment need effective displays?		

Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Organization skills					
Reflection skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					

Learner profile attribute	How did you demonstrate your skills as an inquirer in this chapter?
Inquirers	

2 How can we design products to support someone with limited mobility?

Creating **innovative products**, especially designed for an **individual's needs**, can help **lessen inequalities**.



Figure 2.1 Adaptive devices designed to help people in their daily lives

CONSIDER THESE QUESTIONS:

Factual: What activities do we do every day? Why might someone not be able to do those activities easily? What is ergonomics?

Conceptual: How might the inability to do simple tasks change our daily lives? How might the inability to do simple tasks impact our mental health?

Debatable: Should designers always focus on ergonomics when making a physical product?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

function

IN THIS CHAPTER WE WILL …

- **Find out** how people's daily lives can be affected by disability.
- **Explore** different assistive technology currently available.
- **Take action** by creating our own assistive products.

These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills



Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

We will reflect on this learner profile attribute …

- Caring – we will try to understand how it would feel if you had limited mobility and will design a product for a client with these restrictions.

WHAT IS ASSISTIVE TECHNOLOGY?

Assistive technology, often called **adaptive equipment**, are products that are designed for people with physical difficulties to help them complete everyday tasks. The most well-known are wheelchairs, mobility devices, prosthetic devices and hearing aids, but there are many more products designed to help people do everything from getting dressed to eating food.

THINK–PAIR–SHARE

Activities of daily living (ADLs) is a term often used to determine someone's care needs. These include many of the activities we need to be able to do to function without assistance. These activities can include everything from feeding ourselves to bathing.

Give yourself one minute to write down as many daily tasks as you can. When you have finished, swap the paper with a partner. Read their list. Was there anything else you were missing? Take another minute to add more tasks to your list.

Now look at your list again. Highlight any that would be hard with limited mobility, for example the use of only one hand.

What activities do we do every day?

People may need adaptive products or equipment for many reasons, including acquired brain injuries (strokes, aneurysms, tumours) or traumatic brain injuries (falls, sports injuries, automobile accidents); physical issues, often related to old age, such as arthritis and osteoporosis; as well as physical injuries caused by accidents.

Most of the examples in this chapter will be products designed to help people who have suffered a stroke and have lost or have limited movement in one hand. Although there are many digital tools created to assist people with mobility issues, this chapter will focus on physical products.

Links to: Sciences

You can find out more about biomechanics and prosthetics in Chapter 7 of *Sciences for the IB MYP 4&5: By Concept*.

- Assistive technology is an umbrella term covering the systems and services related to the delivery of assistive products and services.
- Assistive products maintain or improve an individual's functioning and independence, thereby promoting their well-being.
- Hearing aids, wheelchairs, communication aids, spectacles, prostheses, pill organizers and memory aids are all examples of assistive products.
- Globally, more than 1 billion people need one or more assistive products.
- With an ageing global population and a rise in non-communicable diseases, more than 2 billion people will need at least one assistive product by 2030, with many older people needing two or more.
- Today, only one in ten people in need have access to assistive products.

Figure 2.2 Key facts from the World Health Organization

CIRCLE OF VIEWPOINTS

The World Health Organization says that the following people could benefit from assistive technology:

- people with disabilities
- older people
- people with non-communicable diseases, such as diabetes and stroke
- people with mental health conditions including dementia and autism
- people with gradual functional decline.

Today, only one in ten people in need have access to assistive technology due to high costs and a lack of awareness, availability, trained personnel, policy and financing.

www.who.int/news-room/fact-sheets/detail/assistive-technology

Complete the following thinking routine by imagining that you are someone who could benefit from assistive technology but does not have access to it. Choose a person from the World Health Organization list above.

Brainstorm a list of different perspectives and then use this script skeleton to explore each one:

1 **I am thinking of** [the topic] **from the point of view of …**
The viewpoint you've chosen.
2 **I think …**
Describe the topic from your viewpoint.
Be an actor – take on the character of your viewpoint. Write/talk in the first person.
3 **A question I have from this viewpoint is …**
Ask a question from this viewpoint.

WRAP UP

What new ideas do you have about the topic that you didn't have before? What new questions do you have?

Although the number of people who could benefit from assistive technology is increasing, many people do not have access to it currently. Advances in design could help lessen this inequality. This could be done through anything from 3-D printed prosthetics to open-source instructions to make assistive technology, as well as decreasing prices in existing technologies, such as cheaper hearing aids.

MASLOW'S HIERARCHY OF NEEDS

Maslow's hierarchy of needs outlines human motivations and was proposed by psychologist Abraham Maslow in 1943. In it, he explains that we need to fulfil our basic physiological needs first, followed by our safety needs, then love and belonging, self-esteem and, finally once we have fulfilled all of those, we can move up to self-actualization (self-actualization means reaching your full potential).

If we are unable to complete our basic activities of daily living, we may find that we are at the bottom of Maslow's pyramid.

Links to: Individuals and societies

You can find out more about Maslow's hierarchy of needs in Chapter 1 of *Individuals and Societies for the IB MYP 4&5: By Concept*.

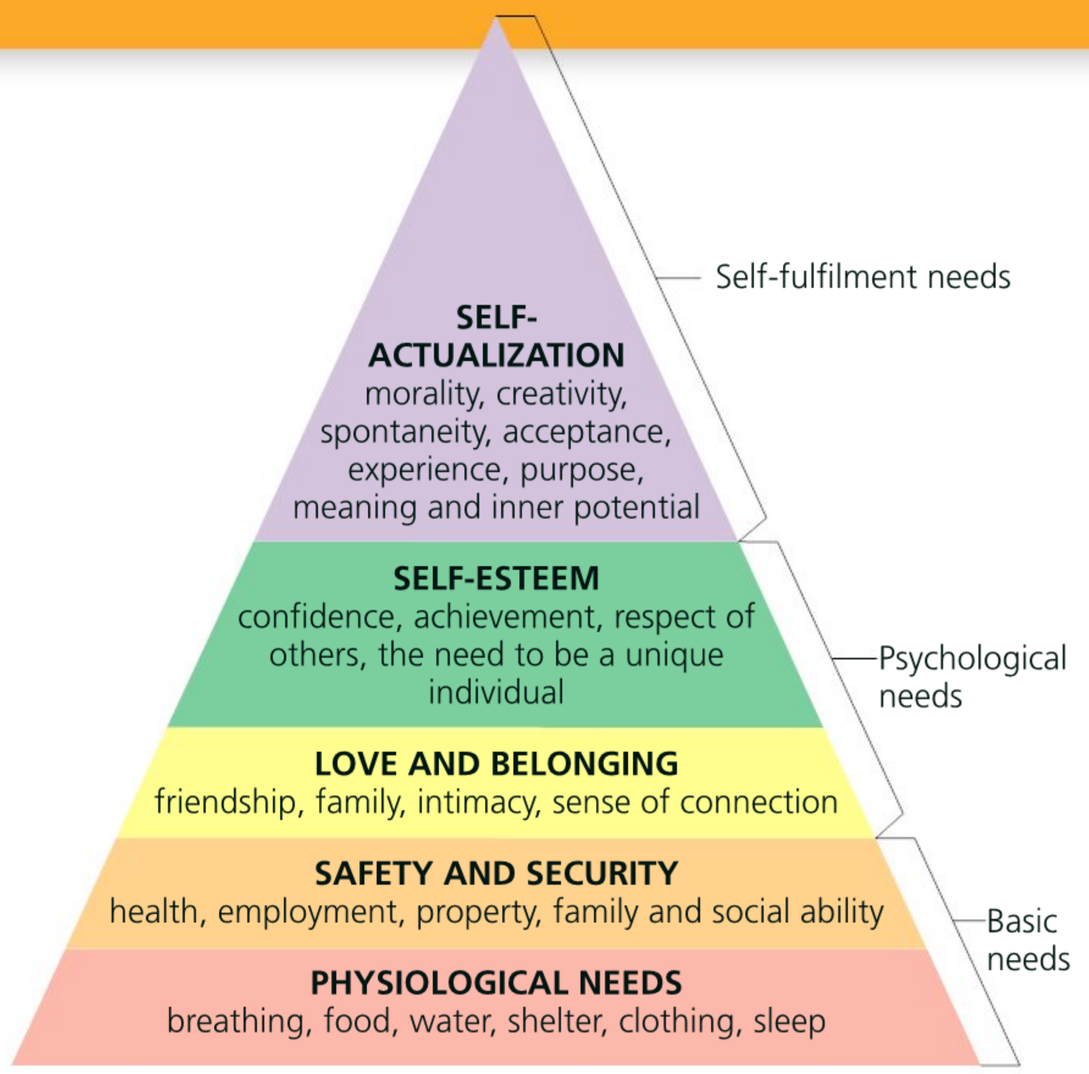


Figure 2.3 Maslow's hierarchy of needs

ACTIVITY: Where do your daily activities fall on the hierarchy?

ATL

Collaboration skills: Practise empathy

Look at the list of daily activities you wrote earlier for the activity on page 27. Where do these belong on Maslow's hierarchy? For example, 'eating breakfast' might belong in the bottom row – physiological needs – whereas 'socializing with friends' might be higher up the hierarchy.

Think about the person whose perspective you took in the 'Circle of viewpoints' activity on page 28. Which activities would they struggle with? How would this impact where they fall on Maslow's hierarchy of needs?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Why might someone not be able to do those activities easily?

EXAMPLES OF INNOVATIVE ASSISTIVE PRODUCTS

MEET THE DESIGNER

Kevin Chiam – Folks Kitchenware for the Blind

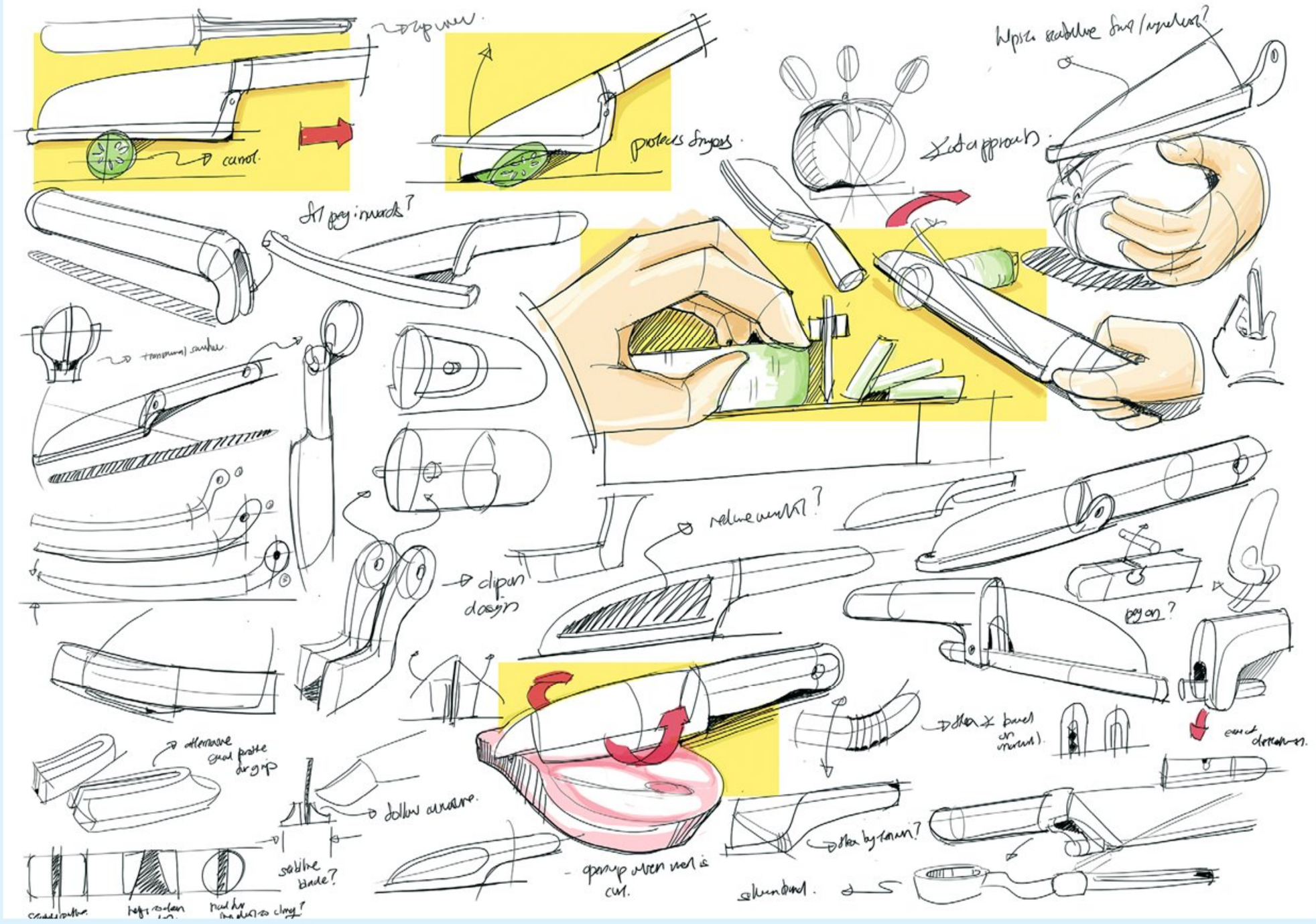


Figure 2.4 Knife by Kevin Chiam

Kevin Chiam is a Singaporean product designer who has created a range of products to make cooking easier for blind people. He was inspired after seeing blind chef Christine Hà on the television show MasterChef (which she won). Although she had mastered cooking, Chiam realized that learning to cook can be difficult and demoralising for blind people, and many injuries can occur. He also understood that supporting blind people in being able to cook would increase their confidence and independence. Chiam worked hard to create Folks Kitchenware for the Blind, which makes use of people's senses of sound and touch to help them cook.

Read more at **www.behance.net/gallery/56339293/Folks-Kitchenware-for-the-Blind**

MEET THE DESIGNER

Emily Tang – Libue (PolyU Design graduate, class of 2015)



■ **Figure 2.5** Libue by Emily Tang

Emily Tang designed Libue, a toilet for people with Parkinson's disease and their family members, when she studied at The Hong Kong Polytechnic School of Design. She noticed that normal toilets were not useful for Parkinson's patients, who often have tremors and commonly suffer from urinary incontinence. Some toilets have railings installed, but these are not always close enough to the toilet and don't provide enough support for a person living with Parkinson's.

Libue allows the user to sit on the toilet directly, without having to approach it backwards to sit down. The lid is a non-slip silicone design and there are support bars to allow the person to use it independently. The toilet can be reverted to the conventional system quickly, so that other family members can use it easily too. This design gives the user independence, comfort and dignity.

You can find out more about Libue here:
http://emilytangstudio.com/project/libue/

MEET THE DESIGNER

PriestmanGoode – Scooter for Life



■ **Figure 2.6** The Scooter for Life by PriestmanGoode

Scooter for Life is a range of products created by the London-based design consultancy PriestmanGoode. It was a special commission for an exhibition at the Design Museum in London in 2017.

This sturdy scooter, a cross between a kid's scooter and the shopping carts you often see older people walking their shopping home with, is designed to be a practical and stylish way to help older people keep active.

Products designed for older people, such as mobility scooters, often focus only on functionality, but this product also focuses on aesthetics. Now granny can be more mobile *and* look cool too!

ACTIVITY: Explore more assistive products

ATL

- Information literacy skills: Access information to be informed and inform others

In groups, see what other innovative assistive products you can find online. You will share what you find with your classmates.

You could start by exploring the following websites:

www.agingcare.com/products

https://carex.com

https://enablingdevices.com/shop

www.ncmedical.com

www.rehadat-hilfsmittel.de/en

or using the following search terms: **assistive technology/products**, **mobility products** or **daily living aids**.

Links to: Physical and health education

You may be able to explore assistive technology through PHE class. What products can be designed to assist people in exercising or staying active?

ACTIVITY: Analysing existing products

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

After you have shared the products you have found with your classmates, pick at least three of them to **analyse**. You might choose to analyse some products your classmates have found.

You could annotate an image of each product, write a list of pros and cons, **describe** the image, or even complete a detailed product analysis like the one shown in Table 2.1.

Product Add name and image			
ADL Activity it helps the user to complete			
Aesthetics			
Cost			
Customer			
Function			
Material			

Table 2.1 Detailed product analysis

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

What is ergonomics?

ERGONOMICS

In the MYP Design Guide, **ergonomics** is defined as 'the application of scientific information and understanding of how humans relate to products, systems, interfaces and environments'.

Ergonomics basically means things that are designed to fit someone's physical needs, so that they can perform a task in the easiest or best way possible.

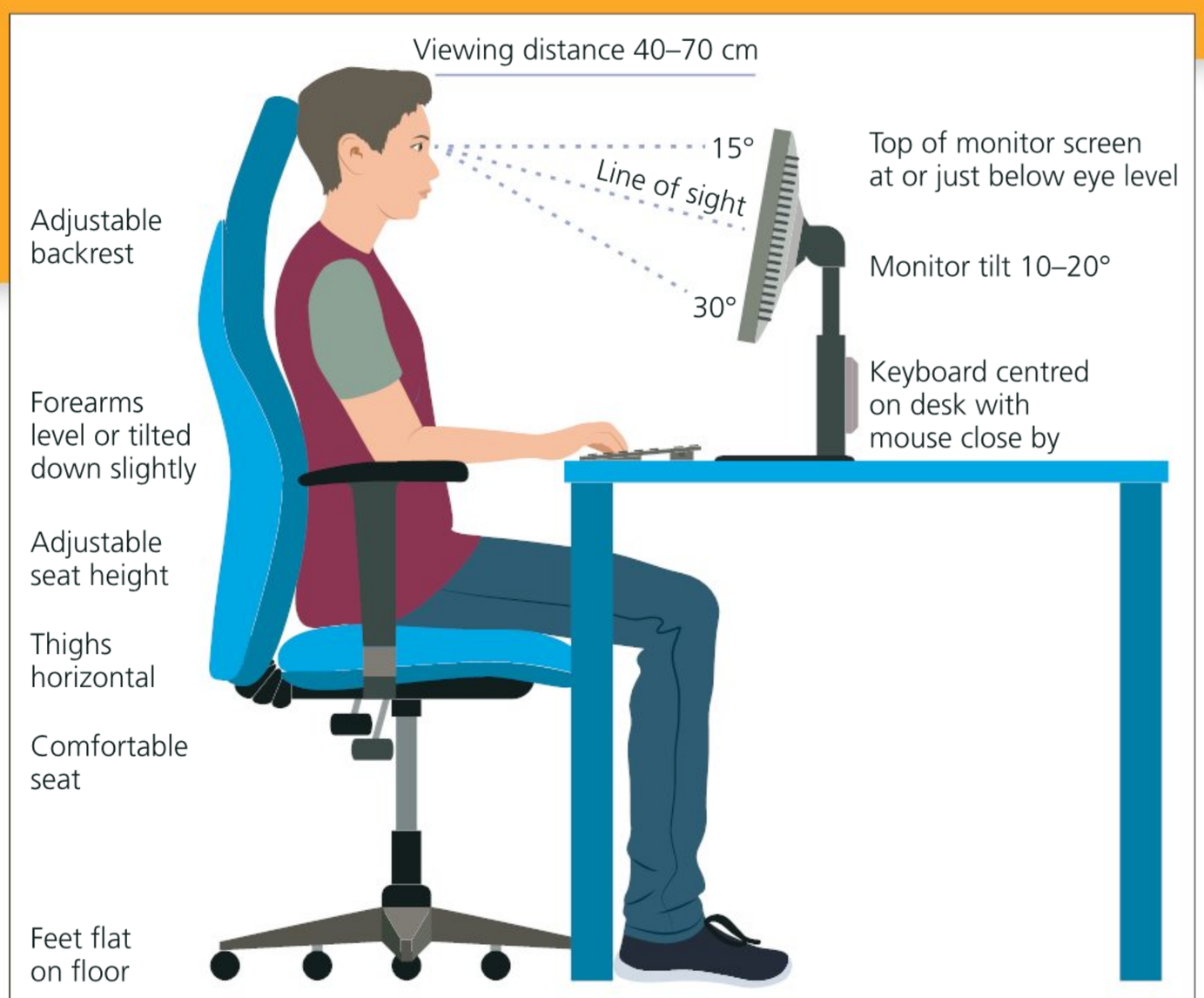


Figure 2.7 An ergonomically designed work space

DISCUSS: Ergonomic design of a chair

Believe it or not, a lot of thought goes into chair design. This includes:

- **measurements: how far is the seat from the ground?**
- **materials: are they strong enough to support most people?**
- **safety: could the user fall from the chair easily?**
- **angles and flexibility: is the angle of the chair good for the user's back? Is the chair comfortable?**

Take a look at a chair in your classroom. You might choose a student chair or even your teacher's chair. How is it ergonomically suited to the user?

Are there different chairs in your school for different ages or in different subject rooms? How does the design of those chairs help their users?



Figure 2.8 Ergonomic chair design

DISCUSS

Look back at the products you analysed earlier. In pairs, **discuss** how ergonomic these existing products are.

The design brief

As a designer, you often have to prepare the design brief before you have secured your contract with a client. The client may also have asked multiple designers or design agencies to deliver design briefs, or pitches. To stand out, yours should show that you understand the problem fully and that you have a clear idea for a solution. You should include some of the initial research you have done into the problem, the needs of the target audience and your analysis of existing products. Use it to show why you are the best designer for the job.

A design brief is usually a short paragraph or summary, but it may contain some bullet points.

Make sure you have covered the following questions:

- What is the problem?
  - Who is it a problem for?
  - What are this person's needs and wants?
- What products exist currently?
  - What are the benefits/weaknesses of the existing products?
- What will you make?
  - How will your idea solve your client's problem?
  - How will your idea meet your client's needs and wants?
  - How will your idea be better than existing products?

What is the problem?	Your classroom needs new chairs! The classroom is used by students aged 11–14, who need somewhere comfortable to sit, but also want chairs that look cool.
■ Who is it a problem for?	
■ What are this person's needs and wants?	Although the existing chairs have flexible backs and are adjustable, they are also stiff, some are broken, and many are covered in gum.
What products exist currently?	
■ What are the benefits/weaknesses of the existing products	I will create a set of chairs that have flexible backs and are adjustable, but also easy to clean. They will be a comfortable place to work, and can be stacked easily to make room for other activities. The chairs will also be designed to fit the average measurements of 11–14-year olds, but will be adjustable for taller/shorter students.
What will you make?	
■ How will your idea solve your client's problems?	The chairs will be blue and grey – the school's colours – and will have the school's mascot printed on the back.
■ How will your idea meet your client's needs and wants?	
■ How will your idea be better than existing products?	The chairs will look good, feel good and will help students to be comfortable while learning.

■ **Table 2.2** Example of a design brief for a classroom chair

Design situation

You have been tasked with designing an assistive product for a teenager. The teenager recently had a stroke and has limited mobility in one hand.

ACTIVITY: Teenage strokes

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

Before you dive into designing for your client, you should do some initial research to increase your understanding of teenage strokes.

Questions you should answer:

- **How common are strokes in teenagers?**
- **What are the causes?**
- **What are the symptoms?**
- **How are strokes treated?**
- **How do people recover from strokes?**
- **How and why are hands affected by strokes?**

Add any additional questions you may have. Don't forget to cite the sources you use.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

ACTIVITY: Sticking out like a store thumb

ATL

- Collaboration skills: Practise empathy

Look at the existing products you have just researched and imagine that you had to use them.

- **Are the products easy or hard to hold or transport?**
- **Do they look easy or hard to use?**
- **Are they subtle or noticeable?**
- **Are they attractive or ugly?**
- **Would you feel comfortable or embarrassed using them?**
- **Are they designed for teenagers or adults?**

After answering these questions, imagine that you have been tasked with finding some adaptive technology for a teenager with limited mobility. What problems might you face? What might the client think of these existing products?



Figure 2.9 An example of assistive technology in action

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

ACTIVITY: Product design brief

ATL

- Collaboration skills: Practise empathy

Now that you have done some research into teenage strokes and considered issues regarding ergonomics, it's time for you to write your design brief.

You should base it on some of the ideas already explored in this chapter.

The following questions might help:

- **What daily task(s) will your equipment help the client with?**
- **What other products already exist to do this and what are their limitations?**
- **What will make your product better?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

Design brief vs design specifications

Although your design brief and specifications may cover some of the same things, such as aesthetics, function and cost, they both have different purposes.

Your **design brief** is a summary of what you plan to do and why. Your **specifications** are a specific list of things you want to achieve. Writing clear specifications helps you to **create** your product and will later help you to assess the success of the product. It is often wise to plan your testing methods as you create your specifications.

The specifications are almost like the contract, showing all the **deliverables** (products) you have promised your client. When you write the specifications, you must make sure that they are clear and concise. Design specifications are usually written as a list or in a table.

EXTENSION

If you would like to know more about deliverables, check out the following links:

https://filestage.io/blog/project-deliverables

www.interaction-design.org/literature/article/7-ux-deliverables-what-will-i-be-making-as-a-ux-designer

https://toggl.com/blog/deliverables-for-a-web-designer

www.laralee.design/design-deliverables

https://backlog.com/blog/why-clearly-defined-deliverables-are-key-to-your-projects-success

Should designers always focus on ergonomics when making a physical product?

ACTIVITY: Specifications for adaptive equipment

ATL

- Organization skills: Use appropriate strategies for organizing complex information

Copy and complete Table 2.3 to write your specifications. You should have clear reasons for each specification and should also add testing methods. Testing methods could include expert appraisal, field tests, performance tests or user trials, as explained in Chapter 1.

Specification type	Specification	Reason	Testing method
Aesthetic			
Cost/quality			
Function			
Material			
Safety			
Size			

Table 2.3 Specifications for adaptive equipment

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i).

Sketches

Your initial sketches should be done in pencil. They can be black and white, or colour; you could even add a colour palette next to your sketches. You may wish to draw each idea from different angles, so that the client can understand exactly what the product would look like and how it would work. Your sketches should be labelled clearly.



Figure 2.10 Examples of sketches from designers

ACTIVITY: Developing design ideas

ATL

- Critical-thinking skills: Propose and evaluate a variety of solutions

Now that you have your specifications, it is time to start visualizing your ideas. For this project we will start off with some rough sketches. In other projects you might develop ideas digitally, create mock-ups or storyboards, or use other ways to visualize your ideas.

Don't forget to think about ergonomics when designing – make sure your product will suit your client's physical needs. It is best to try at least three different ideas, each based on your specification, so that your client can see a variety of designs.

Remember, these are just your initial sketches; you will do at least one more detailed sketch before you **create** your final product.

Once you have finished your sketches, look at each idea and compare it to the specifications – which design meets the most specifications? You may also wish to list the disadvantages and advantages of each design. Make sure you focus on the client's needs and wants when doing this. If possible, get feedback from your client, or ask a classmate to take on the perspective of your client. You might choose to rank the designs or have classmates vote on which they think is best for your client. You could record their comments and feedback.

Once you have done this, **describe** which sketch you will develop further and why. You could even combine ideas from several sketches.

You will then develop that idea by doing more detailed sketches. These sketches should be very accurate. Imagine you are giving your sketch to a manufacturer: will they be able to look at your sketch and make your design easily? Make sure you use a ruler and draw everything to scale. You should add in measurements, colour and further details. Sometimes design students **analyse** their final product by comparing it to this detailed sketch.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).

Prototypes

A **prototype** is an early or first draft or model of your design that allows the user to see the product being used. It is not designed to be the finished product. For example, before a mobile phone company makes a new product, they might produce a clay version so that they can see how users hold the product, if it is easy to type on, and to get feedback on the size. Instead of creating a website, a company might print out the proposed layout of the website and ask users if the different pages flow well.

A prototype can be made of simple materials such as cardboard and tape. It should be designed to last long enough to test it and to gather feedback from your client. Even if your specifications are created for a final product, you can still make a prototype inspired by the specifications.

The feedback gathered from your prototype can be used to improve your design before making a final product. You might even do several rounds of this – making a prototype, gathering feedback, making an improved prototype, gathering more feedback, and so on.

When you are creating a prototype, you need to think about what information you want to gather from your user before moving on with your design. If you were making a website, for example, you might be thinking about the user experience (UX), so you could make a paper prototype showing how the different pages link or where the buttons are. If you wanted feedback on the graphic design, you could make full mock-ups of how you want the front page to look.

When making something ergonomic, you will want feedback on the shape and size of your product.

ACTIVITY: Prototype vs final product

ATL

- Organization skills: Set goals that are challenging and realistic

Before you move on to creating the solution, you need to decide if you are going to make a prototype of your product, or the real deal.

If you choose to make the finished product, you should make it out of material that will last; the product will be intended for long-term use, not just a trial.

If time allows, a designer will make a prototype, gather feedback, then make another prototype based on that feedback to gather even more feedback; they will continue this process before making the final product. Designers may also gather feedback on a final product and use it to make a new, better product (think about all the new models of cars and phones).

Remember to think about the design cycle and how you can repeat steps to make a great final product.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

Sometimes in MYP Design we make prototypes when we are developing ideas in Criterion B: Developing ideas; other times our final product is a prototype.



■ **Figure 2.11** Prototypes of some assistive products

ACTIVITY: Logical plan

ATL

- Communication skills: Organize and depict information logically

Before making your final product, you need to make a logical plan. This should be clear enough for strangers to follow. Imagine that you are a real designer and are sending your instructions off to a factory or workshop. Will they be able to make your product from your design, specifications, plans and prototypes?

For your logical plan for your adaptive equipment, first list the materials and tools needed. Then **create** a detailed, step-by-step plan, with illustrations, showing how to make your product.

Your plan should be detailed and include measurements, timings and the proper names for tools and techniques. If your product will take a long time to make, you could add dates instead of times.

Copy and complete Table 2.4 to create your step-by-step plan. Your product should take more than three steps to make, however, so you will need to add additional rows to your table.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

Materials needed:

Tools needed:

Step 1:	**Illustration:**	**Task:**	**Time:**
Step 2:	**Illustration:**	**Task:**	**Time:**
Step 3:	**Illustration:**	**Task:**	**Time:**

Table 2.4 Template for a step-by-step plan

ACTIVITY: Showing off your product

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

Make sure you take photographs while you make the product. These photographs, along with a photo of the finished product, should be annotated so that you can show off the technical skills you have used. The photo of the final product should show it in use.

Underneath your annotated photographs you should list what went well and what could be improved. You can do this by writing a paragraph, or a list of pros and cons.

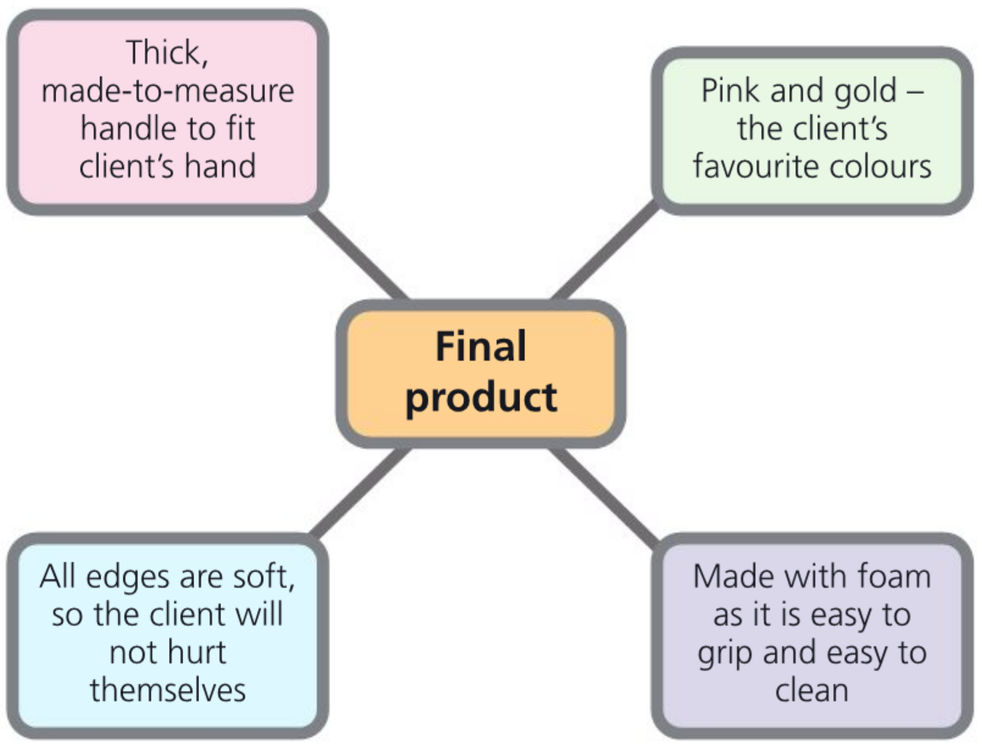


Figure 2.12 Annotate photographs of your final product

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii and iii).

ACTIVITY: Final tests

ATL

- Collaboration skills: Give and receive meaningful feedback

For a piece of assistive technology, you may wish to design a user trial. Here you will be able to test your product, to see if it does what you designed it to do. But you can also gather feedback from your client, to understand the user experience.

Ask a classmate to role play and act like a real-life client.

Come up with some guidelines for your user trial, including how long you want the product to be tested and what you want them to do with it.

Then come up with a list of questions for your client. These questions should be based on the design specifications you wrote earlier and should focus on ergonomics. You should also ask questions about the impact the product could have on the client.

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i).

ACTIVITY: Evaluating the product

ATL

- Information literacy skills: Process data and report results

Copy and complete Table 2.5 to measure the success of your product, along with any possible improvements.

Specification	Met? Yes/No	Evidence from testing	Possible improvements

Table 2.5 Measuring the success of your product against the specifications

Before you **evaluate**, consider any limitations of your specifications. For example, if you met all your specifications but have ideas for improving your product, perhaps your specifications need to be more rigorous.

How closely was the ergonomics of the product linked to the success of the product?

After you have done this, **describe** the potential impact of the product on the client. You may wish to look back at earlier work, including your list of ADLs, Maslow's hierarchy of needs or your design brief. How can the product improve the life of the user?

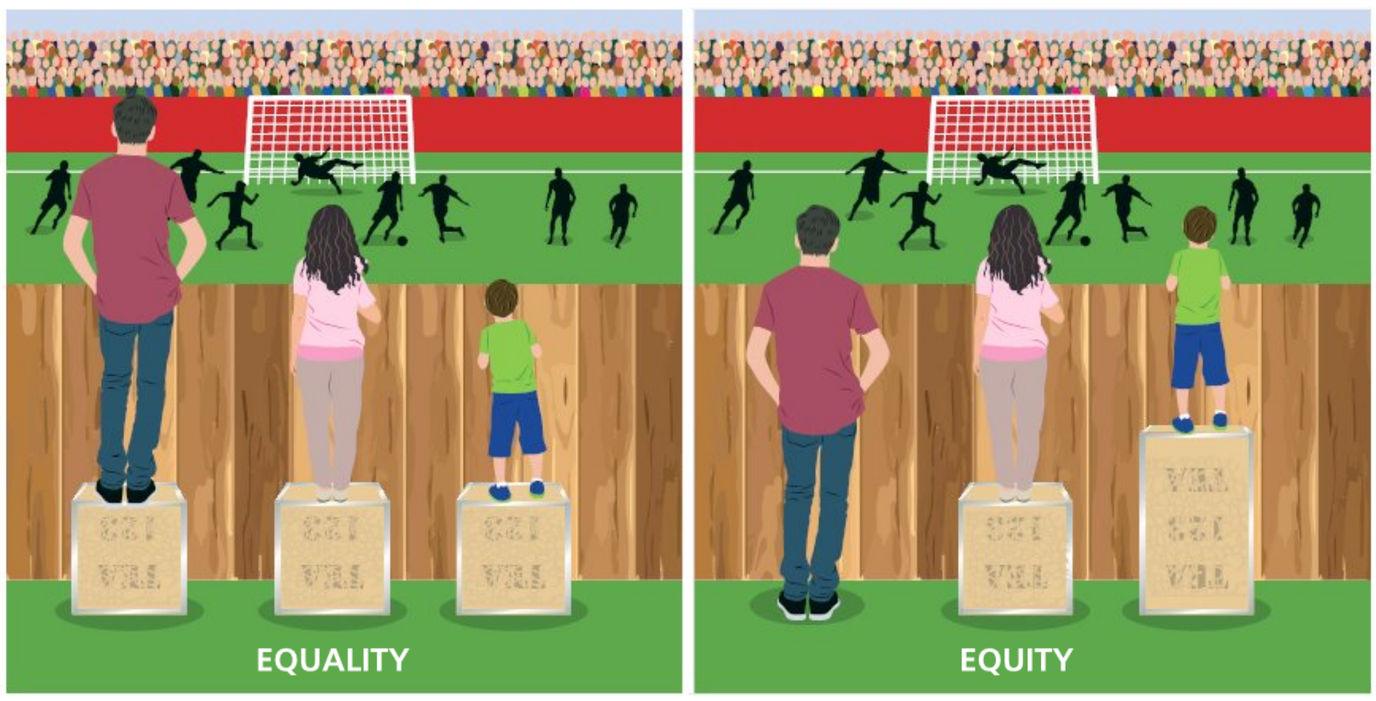
Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (ii, iii and iv).

EXTENSION

- Consider sharing your plan online so others can make it. One example of an online community for making things is www.instructables.com
- Consider entering your product or prototype into a design competition, such as the Assistive Technology Projects one here www.instructables.com/Assistive-Technology-Projects or the Design for Robotics contest here www.instructables.com/contest/designforrobotics2017
- Explore and find out more about digital assistive technologies.

DISCUSS



■ **Figure 2.13** Equality vs equity

Look at the cartoon above. What do you see? What does it make you think? What does equality mean? What does equity mean?

Discuss

Now that you have created and evaluated your product, write an 'elevator pitch' for it by answering the question: 'What role do you think your product plays in creating a fairer world?' This pitch should be one- to two-minutes long (the length of time you might spend in an elevator). You should show off all the great things about your product, including the problem it solves, and show off some of the positive feedback gained in your product evaluation.

Deliver your elevator pitch to your classmates!

! Take action

! If you have not been able to work with a real client in this chapter, consider how you could share your product with someone with real assistive needs. You might want to reach out to a local hospital, hospice, supportive living home or to people online. Alternatively, you could reach out to a company that creates assistive products. You could share and gather feedback on your current product, or even design something new. As pointed out earlier in this chapter, there is an ever-increasing need for assistive technology and your product could have the potential to be a real product.

! Regardless of whether you have made a prototype or a complete, final product, you could enter your innovative design into a competition, such as the James Dyson Award, Red Dot Design Award or even the Google Science Fair.

Reflection

In this chapter we have researched how people's daily lives can be affected by disability. We explored different assistive technology available currently and we took action by creating our own assistive products.

Use this table to evaluate and reflect on your own learning in this chapter.					
Questions we asked	**Answers we found**	**Any further questions now?**			
Factual: What activities do we do every day? Why might someone not be able to do those activities easily? What is ergonomics?					
Conceptual: How might the inability to do simple tasks change our daily lives? How might the inability to do simple tasks impact our mental health?					
Debatable: Should designers always focus on ergonomics when making a physical product?					
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Organization skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					
Learner profile attribute	Reflect on the importance of being caring for your learning in this chapter.				
Caring					

3 How can we be ethical entrepreneurs?

Successful **entrepreneurs** make sure the **systems** they work in are **sustainable**.



Figure 3.1
Tea growing in Sri Lanka

CONSIDER THESE QUESTIONS:

Factual: What systems involve food? Where does the food we eat come from? How ethical is the food we eat?

Conceptual: How might the IB learner profile help us to be an ethical entrepreneur? Who is impacted by the food we eat?

Debatable: Is it the role of food companies or consumers to ensure food is ethical?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER WE WILL …

- **Find out** how the food we eat impacts other people and the planet.
- **Explore** where our food comes from.
- **Take action** by creating an ethical food product.

KEY WORDS

carbon footprint
ecological
ethical
fair trade
Fairtrade
food miles
organic
recipe
sustainable

These Approaches to Learning (ATL) skills will be useful …

- Collaboration skills
- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills



DISCUSS

Let's think about a popular meal – the simple but delicious pizza! Write down all the ingredients, including the toppings, that go into making your favourite pizza. Then write down where you think these ingredients come from.

Now research where the ingredients actually come from. If possible, look at the label of the products in a supermarket or online store.

Can you calculate how far these foods have travelled before they make it on to your plate? This is called the **food miles**. This online calculator might be useful **www.foodmiles.com**

The distance that food travels contributes to its **carbon footprint** – the total greenhouse gas emissions created during its production and transport.

Add up the total distance travelled by all the ingredients in your pizza. What is the total distance? If you were to travel that distance, where might you end up?

FOOD MILES

When we eat something, we don't often think about the journey the food took before it made its way to our plates. The truth is that our meals, and the ingredients that make them, are part of a large system, and we usually only see one part of that system. Our food is part of agriculture and farming, economics, water, energy and even social systems.

When we eat, we usually don't think about the impact that our ingredients can have either. In this chapter, we will think about how the food we eat impacts other parts of our food systems, as well as how it impacts people and the planet.

This chapter will be focused on **creating** a food product, but you could also create a seed-to-table system or even food packaging to promote an ethical product.

Find out how far the ingredients for a Big Mac have to travel to reach a McDonald's restaurant in the UK: **www.cda.eu/blog/where-does-your-big-mac-come-from**

We will reflect on this learner profile attribute …

- Caring – we will think about how our food choices impact other people and the planet.

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

How ethical is the food we eat?

FOOD ETHICS IN PRACTICE

Respect for …	Well-being (health and welfare)	Autonomy (freedom and choice)	Justice (fairness)
People in the industry	Income and working conditions	Freedom of action	Fair trade laws and practice
Citizens	Food safety and quality of life	Democratic informed choice	Availability of affordable food
Farm animals	Animal welfare	Behavioural freedom	Intrinsic value
The living environment	Conservation	Maintenance of biodiversity	Sustainability

Table 3.1 The food ethics matrix

Ethics are moral principles. Someone might choose to buy only local food, as they believe that food that has travelled far is not ethical as it has a large carbon footprint. There are many other choices people make, from being **pescatarian**, **vegetarian** or **vegan**, to only buying **organic** produce.

When we talk about sourcing food ethically, we mean sourcing food in a way that is kind to the people, animals and environment associated with that food. As there are so many different factors that can make one food feel more ethical than others, it is up to the individual to **prioritize** what they think is most important.

ACTIVITY: How does the food we eat affect animals, people and the planet?

ATL

- Transfer skills: Make connections between subject groups and disciplines

Look at the following list of **variables** that could be related to the food we eat:

- **carbon footprint**
- **water use**
- **land use**
- **vegan**
- **organic**
- **fair trade**
- **labour practices**
- **distance food must travel**
- **local economy**
- **jobs created**
- **seasonal**
- **healthy**
- **affordable**
- **non-plastic packaging**
- **destruction of natural habitats.**

You may wish to add in your own variables too.



■ **Figure 3.2** Ethical food options

Copy Table 3.2 then complete it by sorting the variables listed on the left into it. You may wish to include a variable in more than one column.

Animals	People	Planet

■ **Table 3.2** How does the food we eat affect animals, people and the planet?

As there are so many variables, it is obviously hard to buy 100 per cent 'good' food. Looking at the variables in your table, pick out the three that are most important to you and **explain** why.

Want to find out more?

Watch 'What is food ethics? A short explainer by the Food Ethics Council':
https://vimeo.com/272330915

◆ Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Where does the food we eat come from?

ACTIVITY: Diving deeper into the stories behind the food we eat

ATL

- Information literacy skills: Access information to be informed and inform others

Complete one of the two activities below.

1. **Individual activity: Tic-Tac-Toe – pick three of the topics in Figure 3.3 to explore so that you can dig deeper into the stories behind the food we eat.**
2. **Class activity: JIGSAW – divide the class into nine groups, with each group exploring a different topic in Figure 3.3, then sharing feedback with the class.**

Many of the search terms in Figure 3.3 will bring up more than one resource to explore.

After exploring the topic, write a headline for each. The headline should sum up what you have learnt from your research and should grab the attention of others.

Edible insects	Farm to table	Most ethical food companies
Ethical coffee	Impact of food waste	Orangutans and palm oil
Best diet for the planet	Cacao farmers taste chocolate for the first time	Least ethical food companies

Figure 3.3 Ethical food search terms

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

EXTENSION: REPORTER'S NOTEBOOK

- When researching the topics above, **identify** the *facts* and *events* of the situation. Are these clear facts, or do you need more information about them?
- Now look again at the article and name the *thoughts and feelings* of the characters/participants involved in the story. Are they clear, or do you need more information about them?
- Now rewrite your headlines. How different are they now that you have looked at facts, events, thoughts and feelings?

CARBON FOOTPRINT

Carbon footprints tell us how much greenhouse gas emissions different people, events, companies, products and services cause. If you are looking at the carbon footprint of an ingredient, you might consider the emissions involved in growing/rearing the ingredients, where the food has travelled, the footprint involved in processing the ingredient, and more.

This gets complicated if you are thinking about meat, as you also need to think about the footprint of the food the animals eat. It gets even more complicated when you are thinking about a meal with multiple ingredients!

If you **analyse** the carbon footprint of different people based on their diet, you will find that those who eat a lot of meat have the highest footprint, and that vegans have the lowest.

You can learn more about carbon footprints, and can even use a carbon footprint calculator, here: **www.carbonfootprint.com**

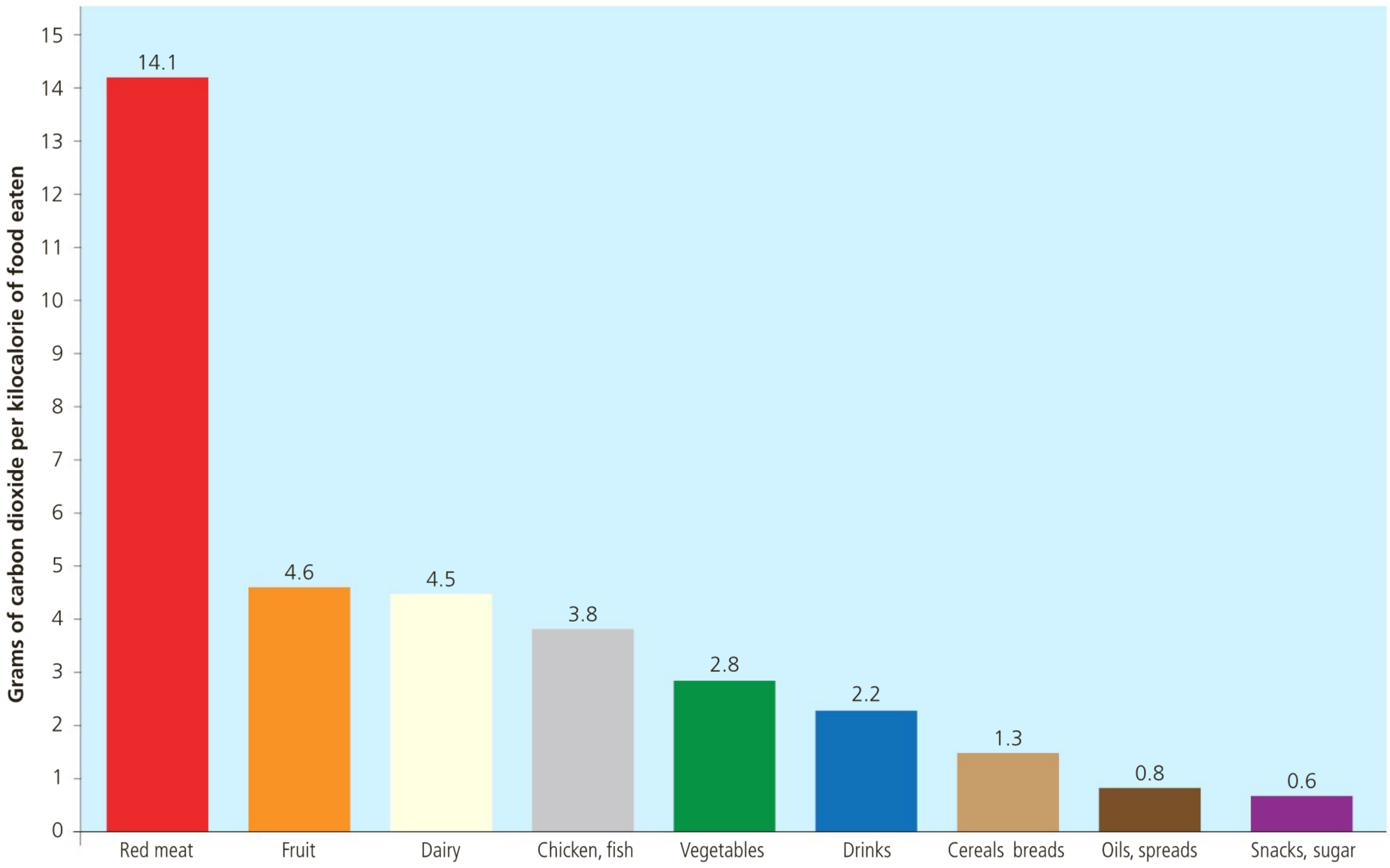


Figure 3.4 Carbon footprint of the food we eat

ACTIVITY: Other people's perspectives

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

CIRCLE OF VIEWPOINTS

Think back to the list of ingredients used to make your pizza. How many people are involved in bringing those ingredients to you?

Pick one of the people involved and use the following framework to explore their perspective:

1. **I am thinking of** [ingredient] **from the point of view of …**
   This is the viewpoint you've chosen.
2. **I think …**
   Describe the topic from that person's viewpoint. Be an actor – take on the character of your viewpoint. Write/talk in the first person.
3. **A question I have from this viewpoint is …**
   Ask a question from this viewpoint.

WRAP UP

What new ideas do you have about the topic that you didn't have before? What new questions do you have?

List your questions and find answers online. You can also note how important the questions are to you by marking them as high or low priority.

Copy and complete Table 3.3, adding as many rows as you need, to list how food can positively and/or negatively impact people involved in the food system. You could think about everything from working conditions through to livelihood.

Positive impact	Negative impact
e.g. Provides income.	*e.g. Income can vary depending on crop success and demand.*

Table 3.3 How food can positively and/or negatively impact people involved in the food system

Use this information to **describe** what problems exist in the food system you use currently.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii and iii).



Figure 3.5 Examples of producing food – which are the most ethical?

▼ Links to: Individuals and societies; Geography; Interdisciplinary unit; Physical and health education

What have you learnt in your Individuals and societies and PHE classes that connects to this chapter?

ETHICAL FOOD

The Oxford English Dictionary describes ethics as 'moral principles that govern a person's behaviour or the conducting of an activity'.

There are no concrete rules for what is ethical or unethical. Factors that might help you decide if food is ethical could include:

- How are the people who create the food treated?
- How are the animals that create the food treated?
- What is the impact on the planet/environment when the food is created?

Key words you might want to look out for are **sustainable**, fair trade, organic, **local**, vegetarian, vegan and **palm oil-free**.

EXTENSION

Try the following web searches:

- **Don't buy these 6 foods if you care about humanity**
- **From bean to bar: Why chocolate will never taste the same again**
- **Jungle Bar: The insect powered protein bar**





How might the IB learner profile help us be an ethical entrepreneur?

ENTREPRENEURS

Entrepreneurs are the people who set out to create successful new businesses. When you are creating your ethical food, imagine that you are creating a new business. It is not enough to just make a high-quality product – you also need to make it desirable. Entrepreneurs are often seen as having a special personality, which helps them make their product or company just that little bit more special than others!

THINK–PAIR–SHARE

Pick a famous entrepreneur, for example Steve Jobs, Elon Musk, Oprah Winfrey, Larry Page, Mark Zuckerberg or even J.K. Rowling (who has many profitable spin-offs from Harry Potter).

Now think about which parts of the IB learner profile they embody (represent) and how.

Create a table or label an image of your entrepreneur with the attributes they show. Be a critical thinker and consider the attributes they do not show or could strengthen.

Are any of the IB learner profiles more important than others for becoming an entrepreneur? What about the importance of being an ethical entrepreneur?

After this, answer the following two questions:

- **How are these attributes helpful to an entrepreneur?**
- **How will they be helpful to you?**

Creative-thinking skills

As there are so many factors that determine if a food is ethical, it is often up to the manufacturer, shop or customer to decide what they think is ethical or not.

Imagine you are starting a new ethical food company. Design a manifesto that **describes** what ethical means to you. Come up with your dream/ideal manifesto – you do not have to worry about practical issues such as profit margins.

Start off by saying 'We, at [company name] strive to make ethical food products. This means that all our food …'

Design situation

A local supermarket wants to sell more ethical food. They have asked you to design a food product that they can sell to their customers. The product should be made of ethically sourced ingredients and should taste delicious.

EXTENSION

Document all the food you eat in a day or a week. **Analyse** the impact that your food choices have on people, the planet and animals. Can you make different choices tomorrow/next week to have a more positive impact?

ACTIVITY: Analysing ethical foods

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

Now that you know about carbon footprints, as well as other factors that might make a food more or less ethical, it is time to **analyse**.

The following list gives examples of fair-trade chocolate products:

- **Warner Bros. Harry Potter Chocolate Frogs**
- **Divine Chocolate**
- **Alter Eco chocolate bars**
- **UNREAL chocolate**
- **Endangered Species Chocolate (ESC)**
- **Beyond Good chocolate**

Choose two or three of the products to analyse. You may wish to consider the name, the ingredients, the packaging, the carbon footprint, and even who you think the bars are marketed at.

You could choose to analyse a different type of food, of course, for example vegan meat alternatives.

Read more:

www.thehpalliance.org/success_stories_nihn

www.fairtrade.net/product

www.independent.co.uk/news/world/politics/fairtrade-it-really-fair-7717624.html

www.theguardian.com/commentisfree/2017/aug/04/fairtrade-benefits-supermarkets-global-south-outdated-model

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

EXAMPLES OF SUSTAINABLE OR ETHICAL FOOD PRODUCTS

THINK–PAIR–SHARE



■ **Figure 3.6** Snacks made from crickets – one of the world's most sustainable sources of protein



■ **Figure 3.7** Plastic-free, edible flight meal trays designed to reduce airline waste



■ **Figure 3.8** Aquaponics is a circular system, where plants are grown above fish-filled water. The fish eat the waste and the plants grow from the water

Look at the examples above and carry out some online research into each of the products.

Which do you think is the most sustainable? Which is the most ethical?

In pairs, share your thoughts and comments. Have you changed your mind?

ETHICAL ENTREPRENEURSHIP

Entrepreneurs are thought to be successful when they set up a business, or launch a product, that makes a lot of money. Making ethical choices, such as paying more for labour, buying local products or working without chemicals, can often cost a company more money. However, many entrepreneurs have strong principles and put ethics at the centre of their business. It may take them more time to get started, or it may make them less money, but these entrepreneurs are committed to working ethically.

DISCUSS

Ethical entrepreneurs can be described as being principled. What other IB learner profile attributes might an entrepreneur need to have in order to work ethically?

ACTIVITY: Pitching your product

Before you start to design your product, think about the ethical **stance** you want your company and product to take. For example, maybe you will focus on creating an organic product, or maybe a plant-based vegan product. Make sure you think about this focus when developing your ideas.

ATL

- Collaboration skills: Make fair and equitable decisions

Now that you've thought more about what can make food ethical, you should write a design brief to pitch your idea. You should include:

- **What is the product you will make?**
  (For example, a nutrition bar, smoothie, ready meal, and so on.)
- **How will it be ethical?**
  (For example, low carbon footprint, fair-trade ingredients, and so on.)
- **What will make people want to buy it?**
  (For example, taste, appearance, cost, and so on.)

Remember that we are thinking about entrepreneurship in this chapter, so you really need to sell your idea! You might do this through a catchy slogan or clever name, or by showing how your product is different to everything currently available on the market.

You should use persuasive language and show why your product will be better than existing products. Don't forget to mention the impact of your product and focus on how ethical it is.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

Presentation tips

Pitching is just another word for presenting your ideas. To make a successful pitch as a product designer you will need to:

- make eye contact with your audience
- know what you are going to say – don't read from a script
- project your voice and speak clearly and slowly
- breathe!
- make good use of your words – you could use alliteration, similes, rhetorical questions and persuasive language
- **present** clear facts – say what exactly makes your product special
- **describe** why you love your product and why the audience should too
- add visuals, but don't rely on them
- leave time for questions
- smile!

ACTIVITY: Food specifications

ATL

- Collaboration skills: Take responsibility for one's own actions

Before you start experimenting in the kitchen you should make your specifications. This is a list of things your product needs to have/do to be successful. Make sure you include the elements you mentioned in your design brief, which make your product ethical and desirable.

Make a table with the following headings:

1. **Specification**
2. **Reason**
3. **Testing methods/questions**

If you are finding it difficult to write testing methods/questions, make sure your specifications are really specific. When you **evaluate** your final product, you should be able to say 'yes' or 'no' for each of the testing methods.

Make sure you have specifications that relate directly to why your product is ethical.

Examples of testing methods/questions could include:

- **Ingredients used to create my smoothie will all come from within 50 miles.**
- **At least 90 per cent of users who test my chocolate bar will rate it as 'tasty' or 'very tasty'.**
- **All ingredients in my soup will be vegan.**

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i) and Criterion D: Evaluating (i).

ACTIVITY: Generating new ideas

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Before you start working on your final product, you will want to come up with initial ideas. You could do this by either testing ingredient combinations and basic recipes, or creating sketches of your final product. It depends on whether you want to get feedback about the taste of the product or its appearance. Ideally you would do both.

If you are starting off with initial sketches, you may want to **describe** the taste, smell and texture of the product.

If you are designing a food product with multiple parts, such as a sandwich or a chocolate bar with different layers, you could draw an **exploded view** (see page 128 for more information on this). Normally diagrams showing exploded views are used in product design for technical products and machines, such as drills, cars and washing machines. Here, however, an exploded view could show the user things that are hidden beneath the surface.

Figure 3.9 Exploded view drawing of a veggie burger

Many restaurants and food companies have 'test kitchens' where they can test out new recipes. Testing out ingredient combinations can be a lot of fun and can help chefs to find new and unexpected flavours.



Figure 3.10 A test kitchen

Look at your specifications and see which you could test at this stage. If you are developing ideas in the kitchen, you may want to gather feedback about the taste. If you are sketching out ideas, you may want to gather ideas about the aesthetics.

Once you've gathered the feedback, **identify** which design you want to take further and **justify** your decision based on that feedback.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii and iii).

Who is impacted by the food we eat?

ACTIVITY: The recipe

ATL

- Organization skills: Use appropriate strategies for organizing complex information



Figure 3.11 A recipe in a cookbook

It's time to **create** a recipe for your food product!

You might want to **analyse** online **recipes** or a cookbook to see examples of how recipes are laid out. All recipes should contain an ingredients list, and then instructions that include the four Ts: techniques, time, temperature and tools.

Make sure your recipe is clear; someone else should be able to follow it without your assistance. It might help to add clear planning drawings or diagrams.

When looking at existing recipes, think about how they are organized. Which one makes most sense to you? Why? You might wish to use the same strategy when organizing your recipe.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iv) and Criterion C: Creating the solution (i).

ACTIVITY: Creating your food

ATL

- Transfer skills: Combine knowledge, understanding and skills to create products or solutions



Figure 3.12 Creating your food product

Follow your recipe exactly to make your product. Take photographs or videos along the way to show the process.

If the food does not turn out how you planned, adjust your recipe and make it again. Be sure to document any changes you make to your recipe and **explain** why you made them.

Take a photograph of the final product too. You might even want to research how to **take perfect photos of food**.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii, iii and iv).

EXTENSION

Although this chapter focuses on creating food products, you could also create packaging or advertising for your food. Looking at foods that are identified as being ethical, can you see any similarities in the ways they are promoted? Do they use similar colours or motifs? Do they use similar language?

Imagine that you have been given one energy bar but must advertise it in three different ways: as a fun snack for children, as a healthy snack for new parents, or as a bar for athletes in training. What name would you give the energy bar and how would you package it? How would you pitch the product to the different groups?

Now that you have considered how differently you can promote a single product, think about it from the consumer's point of view. As a consumer, how would you go about finding out if a product is really as healthy and ethical as advertised? How would you figure out the impact that the product has on people, animals and the planet?

ACTIVITY: Does it pass the test?

ATL

- Critical-thinking skills: Evaluate evidence and arguments

There are three different ways you could test your product:

1. **Use the testing methods you wrote earlier, next to your specifications. Test as many of these specifications as you can. Remember, you should be able to show how ethical your product is based on them.**
2. **The product is no good if it tastes bad, so it's time to ask people to taste it. Decide how much of the product they should taste (a full sample, or just a bite), and think about the questions you want to ask them. You might want the user to describe or rate the taste. You can also gather further feedback and ask consumers if the food is attractive and whether they think it is good value for money.**
3. **If all your specifications are not covered, you may also want to test your product by getting expert appraisal. You could ask a chef, design teacher or supermarket owner for feedback.**

Make sure you **summarize** your results to show the success of the test and how the product could be improved.

You can now use this data to convince the supermarket (your teacher or peers) to stock or invest in your product. Make sure you talk to them about the impact of the product. Remember to think about how people, animals and the planet are impacted by your product. Use your entrepreneurial flair to show why your product should be stocked in the supermarket!

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (ii, iii and iv).

Is it the role of food companies or consumers to ensure food is ethical?

UNITED NATIONS' GLOBAL GOALS

Ethical food choices can help us achieve the UN Global Goal of responsible consumption and production.



Figure 3.13 Target 12: Responsible consumption and production

REFLECTION

Reflect on your product in relation to this goal. You may also want to research the other UN Global Goals outlined in Figure 8.3 on page 158, as your product could play a role in helping to reach these too.

> 'Our planet has provided us with an abundance of natural resources. But we have not utilized them responsibly and currently consume far beyond what our planet can provide. We must learn how to use and produce in sustainable ways that will reverse the harm that we have inflicted on the planet.' –
> **www.globalgoals.org/12-responsible-consumption-and-production**

THINK–PAIR–SHARE

Is it the role of the food companies, or the consumer, to make sure the food we eat is ethical?

EXTENSION

- Research the systems that produce other products that you use; for example, find out more about the journey of the clothes you are wearing. Does it impact any of the other UN Global Goals?
- When shopping or ordering food, think about how it impacts people and the planet.
- Make a change to your diet. This could be shopping local, buying fair trade or organic, or eating less food that comes from animals.
- Have you heard about **Veganuary**? What about **Fairtrade Fortnight**? Why not find out about them and maybe join in with some of the events?
- Donate to a charity that supports people involved in our food systems, or give a micro-loan to someone who works with food or agriculture through Kiva: **www.kiva.org**
- **Create** your product and sell it at school.
- Raise awareness about an ethical issue related to food, such as fair trade or veganism.

! Take action

! Investigate the food being sold in your school, including lunches, snacks and any food available in vending machines. How ethical is it? How could the school make better choices? How aware are the students, staff and parents about the ethics of the food they eat at the school? Come up with a plan and **present** it to the leadership in your school. Your plan could include anything from meat-free Mondays to switching to fair-trade coffee in the staff room.

Reflection

In this chapter we have looked at how the food we eat impacts other people, animals and the planet. We explored where our food comes from and we took action by creating an ethical food product.

Use this table to evaluate and reflect on your own learning in this chapter.						
Questions we asked		**Answers we found**		**Any further questions now?**		
Factual: What systems involve food? Where does the food we eat come from? How ethical is the food we eat?						
Conceptual: How might the IB learner profile help us to be an ethical entrepreneur? Who is impacted by the food we eat?						
Debatable: Is it the role of the food companies, or the consumer, to make sure the food we eat is ethical?						
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**				
		Novice	**Learner**	**Practitioner**	**Expert**	
Collaboration skills						
Organization skills						
Information literacy skills						
Critical-thinking skills						
Creative-thinking skills						
Transfer skills						
Learner profile attribute	Reflect on the importance of being caring for your learning in this chapter.					
Caring						

4 How can we make a toy to improve the life of a refugee child?

To create a **fairer world**, we must first **evaluate** and **understand** the **needs of different communities**.



■ **Figure 4.1** Refugees in a camp

CONSIDER THESE QUESTIONS:

Factual: What is a refugee? How many children are refugees? What problems do refugee children face?

Conceptual: How might a toy improve the life of a refugee? What would it feel like to be a refugee?

Debatable: Should we be focusing on creating shelter/products that meet other basic needs of refugees, instead of toys?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

refugee displaced migrant

IN THIS CHAPTER WE WILL …

- **Find out** what problems refugees face.
- **Explore** ways that play can improve the lives of refugee children.
- **Take action** by creating a toy for a refugee.

We will reflect on this learner profile attribute …

- Open-minded – we critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.



These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

In this chapter we will be thinking about the lives of refugees, particularly child refugees. As your client will be a refugee child, you will have to take the perspective of the child and practise **empathy** so you can understand their experience.

Many charities seek toy donations for refugees – after completing this chapter you may decide to donate your toy to a refugee child in need.

THINK–PAIR–SHARE

What does home mean to you?

Use your five senses – what does home feel, taste, smell, sound and look like?

If you had to leave your home and take only a suitcase of possessions with you, what would you pack and why?

What would you not be able to take with you, but want to pack?

What is a refugee?

According to the UN Refugee Agency (UNHCR):

> *'A refugee is someone who has been forced to flee his or her country because of persecution, war or violence. A refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership in a particular social group. Most likely, they cannot return home or are afraid to do so. War and ethnic, tribal and religious violence are leading causes of refugees fleeing their countries.'*

DISCUSS

According to the UN Refugee Agency: 'Two-thirds of all refugees worldwide come from just five countries: Syria, Afghanistan, South Sudan, Myanmar and Somalia.'

Do some online research and find out:

- **Why do so many refugees come from the countries listed above?**
- **How many refugees are children?**
- **How many refugees have been resettled in your country?**

You may wish to generate and answer your own questions too.

See if you can find some newspapers published in Syria, Afghanistan, South Sudan, Myanmar or Somalia. What are the main headlines? Visit **www.newspapermap.com** or **www.freedomforum.org/todaysfrontpages** to find relevant newspapers.

Practise empathy

Empathy is an important skill for all designers to have. It can help us better understand our clients, which will lead to us making products that best suit their needs. Imagine if a designer was making an outfit for you but only knew your gender and age – now imagine the designer got to meet you, interview you and find out about your interests, hobbies, the types of clothes you like, your personal style … the designer who knows their client best, makes the best products!

There are many famous people who are refugees, for example:

- Scientist Albert Einstein fled Nazi Germany and moved to the USA in 1932.
- In 1989, singer-songwriter Regina Spektor was admitted to the USA as a refugee from Russia.
- World Champion and Olympic athlete Mo Farah moved to the UK as a refugee from Somalia at the age of eight.
- Singer Rita Ora and her family fled ethnic persecution in Kosovo.
- The actress Mila Kunis entered the USA on a religious refugee visa, leaving the Ukraine in 1991.

ACTIVITY: What are they thinking?

ATL

- Collaboration skills: Practise empathy



Figure 4.2 What are they thinking?

Pair up with a classmate and look at Figure 4.2. One of you should explore the thoughts and feelings of the man on the left, while the other should explore the thoughts and feelings of the family on the right. Individually, write down what you think that person is thinking and why. Share your ideas.

Part of the International Baccalaureate's mission is to encourage students 'across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right'. How might this part of the IB's mission help refugees and those who interact with refugees?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

EXTENSION

Find out more about refugees and their stories. Do some online research to increase your **learning about refugees**.

The following organizations have some good resources and videos:

www.unhcr.org/uk/teaching-about-refugees.html

https://refugeeweek.org.uk/get-involved/education-resources/classroom-resources

www.unicef.org.uk/rights-respecting-schools/resources/teaching-resources/guidance-assemblies-lessons/refugee-crisis-europe/

www.amnesty.org.uk/education-resources-refugee-asylum-immigration

What problems do refugee children face?

DISCUSS

Imagine you had to move away from your parents:

- **What would you miss?**
- **What would you struggle to do without them?**

Read this interview from Siba, a 19-year-old refugee from Syria:

> 'My name is Siba. I fled from southern Syria after life became too dangerous for us. The turning point came when a bomb went off and my father was injured in the face and hands. After that, the whole family fled to Jordan. My parents are still there. But I came to Europe with my brother and sister, who is six years old.
>
> 'All I long for is to have a peaceful life for me and my family. I hope to go to Germany. I also dream of being reunited with my parents. So once the necessary paperwork is done, I want them to join us too.
>
> 'Although things are very bad in Syria, I still have warm feelings for my home country. There is no place like it. But right now it is too dangerous for us.'

Even though Siba said that Syria was too dangerous to live in, she also said that she has warm feelings for her home country. What do you think she might miss about everyday Syrian life? What would you miss if you moved away from your home country?

Links to: Individuals and societies

You might dig deeper into the causes of displaced people in your Individuals and societies class, and may explore the current refugee crisis in more detail.

PEEL THE FRUIT

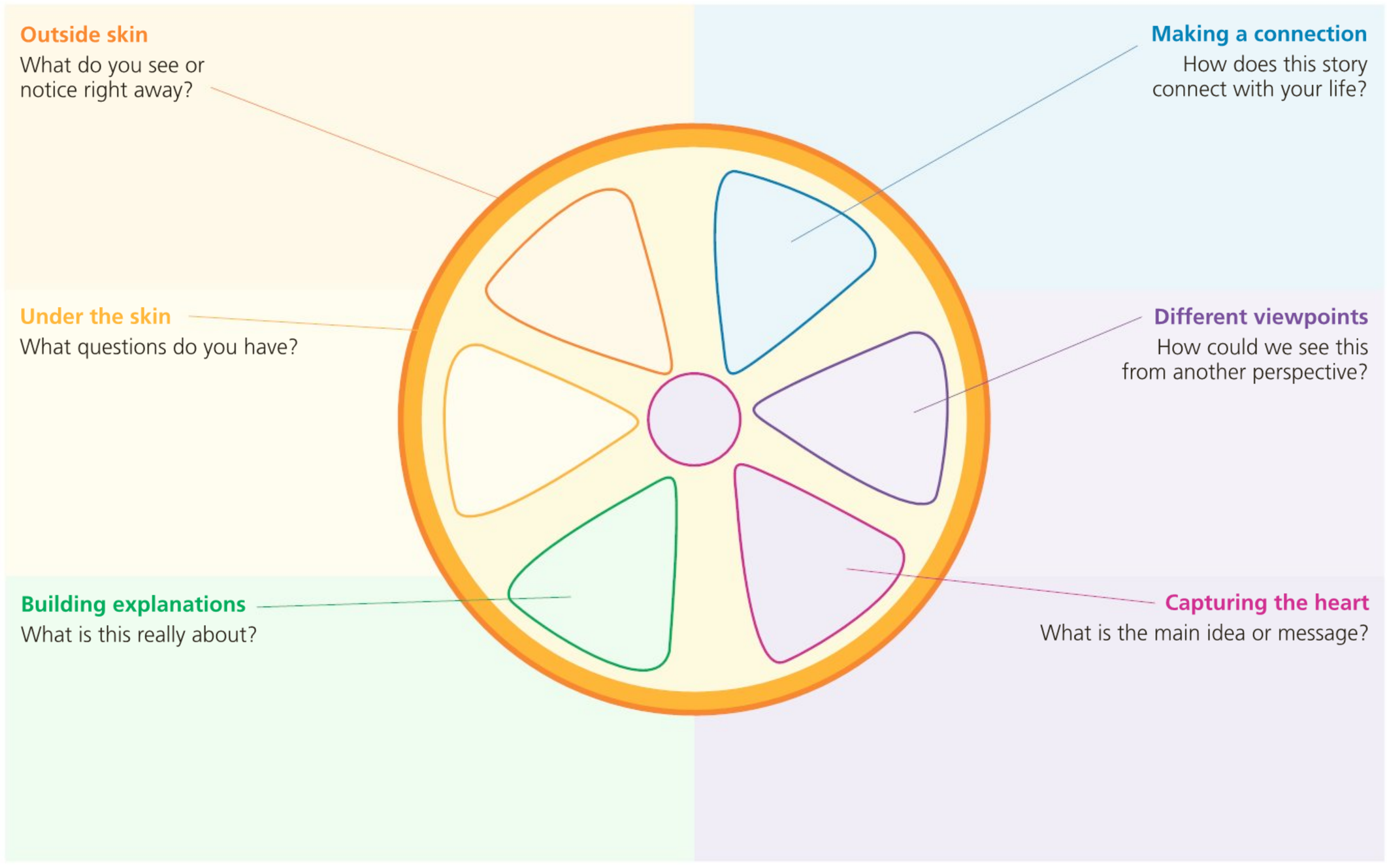




■ **Figure 4.3** Refugee children playing with toys

Pick one of the photographs above and work in a group to 'peel the fruit'. This activity will help you to unpack and understand a complex issue and to share ideas with your classmates. It will help you to better organize your thinking and document your observations.

Use the template given in Figure 4.4. You could all write in different coloured pencils so that you can see the ideas of others, or maybe use sticky notes that you can move them as your thinking changes.



■ **Figure 4.4** 'Peel the fruit' template


1
DEFINITION OF A CHILD
2
NO DISCRIMINATION
3
BEST INTERESTS OF THE CHILD
4
MAKING RIGHTS REAL
5
FAMILY GUIDANCE AS CHILDREN DEVELOP
6
LIFE, SURVIVAL AND DEVELOPMENT
7
NAME AND NATIONALITY
8
IDENTITY
9
KEEPING FAMILIES TOGETHER
10
CONTACT WITH PARENTS ACROSS COUNTRIES
11
PROTECTION FROM KIDNAPPING
12
RESPECT FOR CHILDREN'S VIEWS
13
SHARING THOUGHTS FREELY
14
FREEDOM OF THOUGHT AND RELIGION
15
SETTING UP OR JOINING GROUPS
16
PROTECTION OF PRIVACY
17
ACCESS TO INFORMATION
18
RESPONSIBILITY OF PARENTS
19
PROTECTION FROM VIOLENCE
20
CHILDREN WITHOUT FAMILIES
21
CHILDREN WHO ARE ADOPTED
22
REFUGEE CHILDREN
23
CHILDREN WITH DISABILITIES
24
HEALTH, WATER, FOOD, ENVIRONMENT
25
REVIEW OF A CHILD'S PLACEMENT
26
SOCIAL AND ECONOMIC HELP
27
FOOD, CLOTHING, A SAFE HOME
28
ACCESS TO EDUCATION
29
AIMS OF EDUCATION
30
MINORITY CULTURE, LANGUAGE AND RELIGION
31
REST, PLAY, CULTURE, ARTS
32
PROTECTION FROM HARMFUL WORK
33
PROTECTION FROM HARMFUL DRUGS
34
PROTECTION FROM SEXUAL ABUSE
35
PREVENTION OF SALE AND TRAFFICKING
36
PROTECTION FROM EXPLOITATION
37
CHILDREN IN DETENTION
38
PROTECTION IN WAR
39
RECOVERY AND REINTEGRATION
40
CHILDREN WHO BREAK THE LAW
41
BEST LAW FOR CHILDREN APPLIES
42
EVERYONE MUST KNOW CHILDREN'S RIGHTS
43-54
HOW THE CONVENTION WORKS

ACTIVITY: Unpacking the suitcase

ATL

- Collaboration skills: Practise empathy

Look back at the 'suitcase you packed' earlier in the chapter. Did it include anything for you to play with or for recreational activity? It could be a toy, a game or even a piece of technology. Why did you choose it?

Imagine you are a primary school-aged child. What would you pack in your suitcase? Why?

Why is play important to children?

Why might play be important to a child experiencing trauma?

Assessment opportunities

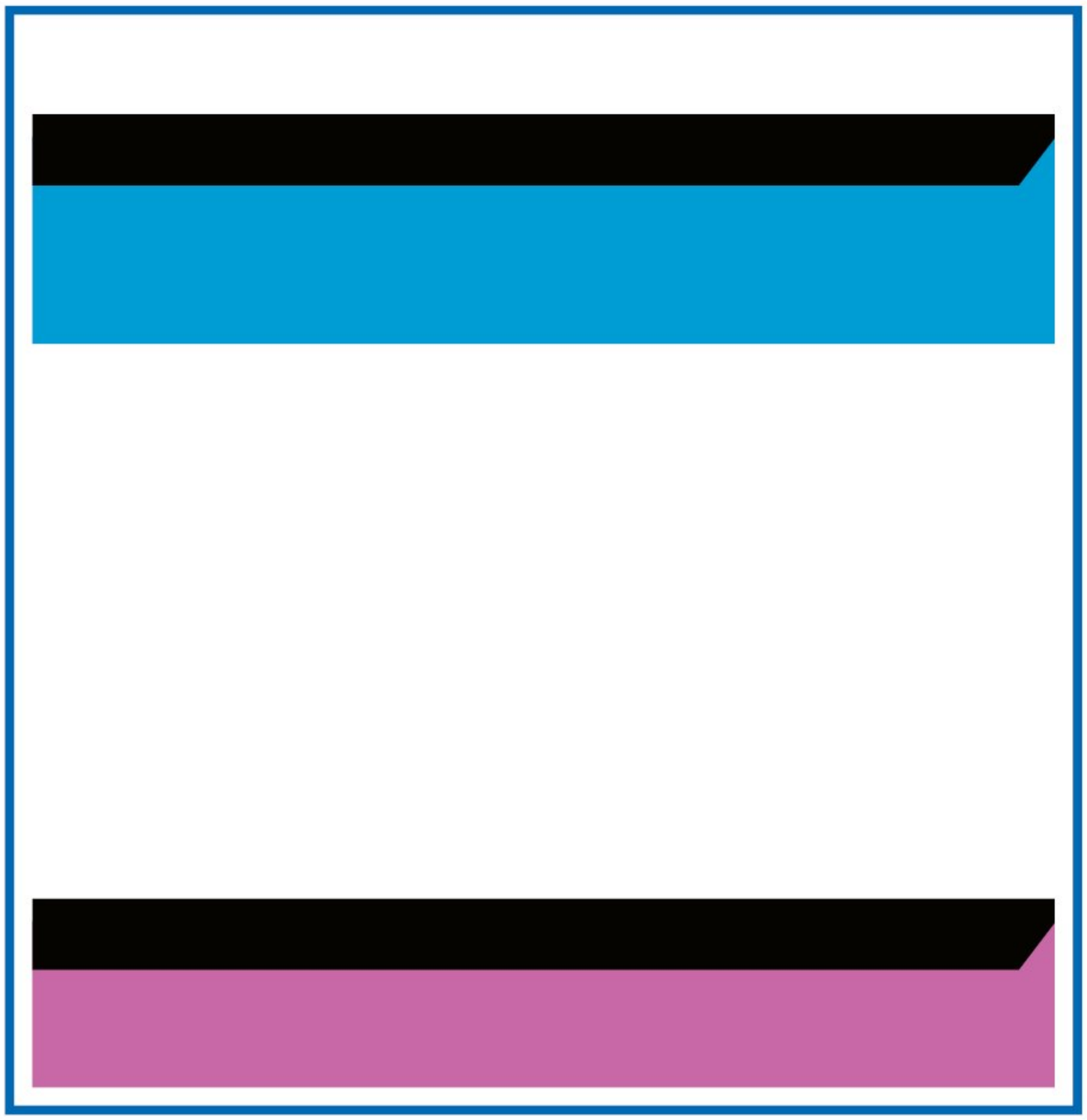
- This activity can be assessed using Criterion A: Inquiring and analysing (i).

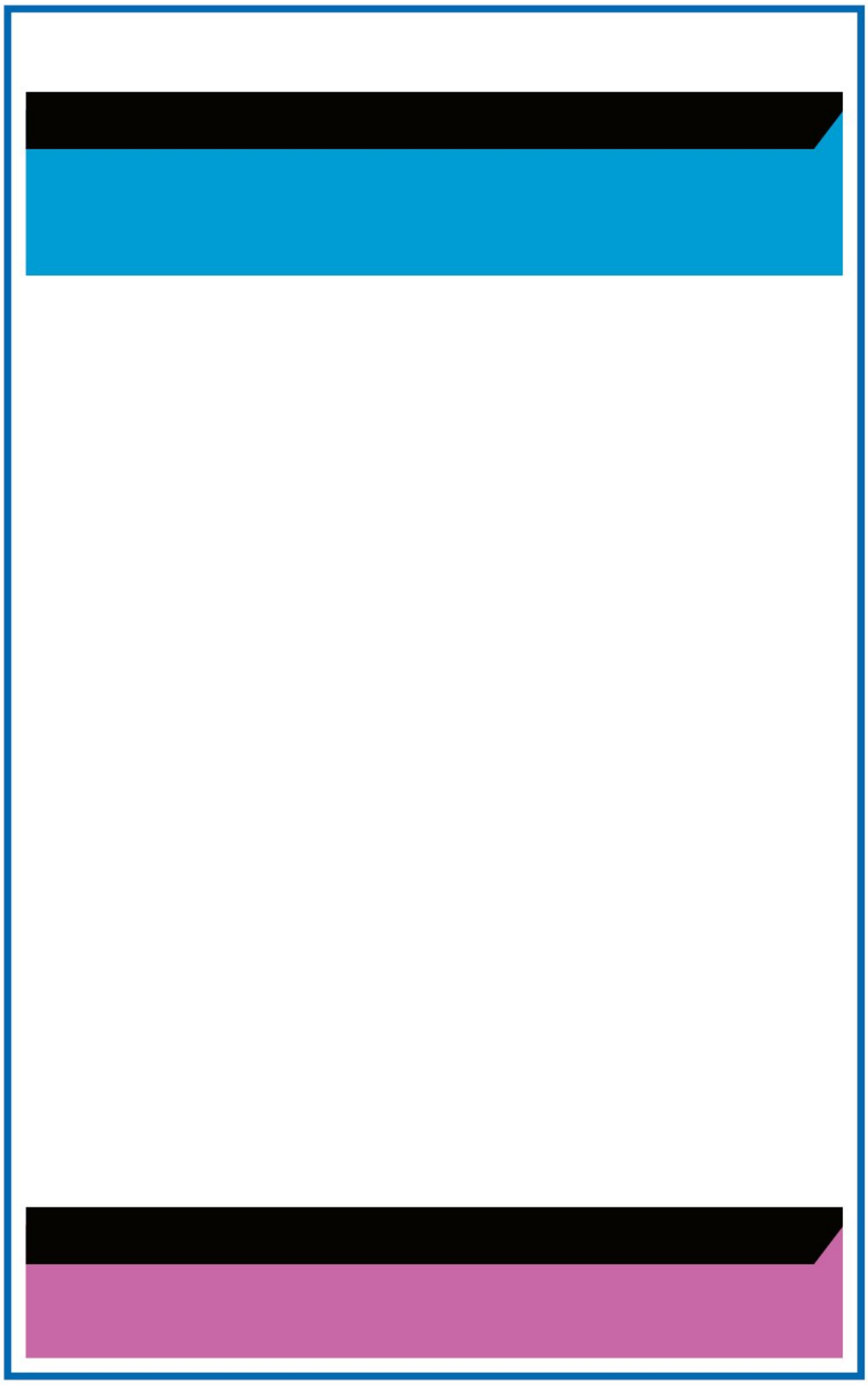


Figure 4.6 A refugee child carrying their belongings and a toy



Figure 4.7 Joan Torres visits a Syrian refugee camp in Iraq; locals told him he could bring in supplies such as pasta and rice, but recommended toys as this would bring the most happiness





SOME EXISTING PRODUCTS

Some designers have been making the news with their toy products for refugee children.



Figure 4.8 South Sudanese refugee children practise their storytelling skills with locally made hand puppets

Designer Lisanne Koning believes kids everywhere should have access to toys. Find out more about how she has made use of boxes for refugee supplies as toys too:

www.fastcompany.com/90149578/these-boxes-for-refugee-supplies-double-as-kids-toys

This non-profit group 'Don't Cry ... I'm Here' welcomes refugee children by giving them dolls they recognize themselves in:

www.startribune.com/don-t-cry-i-m-here-dolls-welcome-newly-arrived-refugee-children-to-minnesota/565332472/

https://dontcryimhere.org

DISCUSS

Do some online research into the products mentioned on pages 78–79 and any other toys designed for refugee children. You can use the following search terms: **refugee designed toys**.

Use the prompts you used earlier to **analyse** these toys:

- **Does it require batteries?**
- **Is it easy to break?**
- **Does the toy need instructions?**
- **Does it make reference to a particular TV or movie character?**
- **Does it promote violence?**
- **Is it culturally sensitive?**
- **What age is it suitable for?**
- **Is it safe?**

What do you think of these products? How do they help?

SESAME STREET CHARACTERS VISIT REFUGEE CAMPS

The International Rescue Committee (IRC) and Sesame Street have been spreading joy by visiting refugee camps. In 2017, the MacArthur Foundation awarded this partnership a $100 million grant to continue their work. This was done through their 100&Change competition.

This initiative has reached millions of children in places including Iraq, Jordan, Lebanon, Syria, Bangladesh and Latin America. It is considered the largest humanitarian response focusing on early childhood intervention. The IRC and Sesame Street have reached children in a variety of settings, from classrooms to health clinics. They have also introduced a programme called Ahlan Simsim ('Welcome Sesame' in Arabic), which is designed for children and caregivers impacted by displacement (mainly related to the Syrian conflict). The focus is on developing and building on social-economic skills. Ahlan Simsim is delivered in Arabic and even has specially designed characters, who feature alongside classic Sesame Street characters. Not only does the initiative bring puppets to the people, but it also offers digital content, including videos available on YouTube.

During the Covid-19 pandemic, they were unable to continue their in-person support for the most vulnerable people (such as refugees and those displaced by conflict), but they made a lot of content available online and through WhatsApp, including storybooks and resources for parents.

www.sesameworkshop.org/what-we-do/refugee-response

www.sesameworkshop.org/what-we-do/shows/ahlan-simsim

www.rescue-uk.org/sesame?utm_source=www.rescue.org&utm_medium=georedirect

The MacArthur Foundation says:

> *'Sesame Workshop and IRC will use the $100 million grant to implement an evidence-based, early childhood development intervention designed to address the "toxic stress" experienced by children in the Syrian response region – Jordan, Lebanon, Iraq and Syria. The project will improve children's learning outcomes today and their intellectual and emotional development over the long term.'*

To find out more search **The IRC** and **Sesame Street**.

DISCUSS: The importance of role play

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Why might puppets or other role-playing toys be a particularly good choice for a refugee child?

The Sesame Street Foundation has many other social impact activities with the focus of 'Making a Difference for Children in Need'. Sesame Street was founded in 1969 to teach children through television, but now has projects to support children in over 150 countries. These initiatives include supporting military families, children with autism, promoting gender equality and teaching about health and hygiene.

Search: **Sesame Workshop Social Impact Initiatives**

Think about other difficult challenges that children might face. How could puppets or toys help?

What problems do refugee children face?

According to UNICEF, common problems faced by refugee children include:

- *Mental health: 'I don't feel so good.'*
- *Lack of education: 'Why can't I go back to school?'*
- *Integration: 'Where do I belong?'*
- *Internal displacement: 'When can I go home?'*
- *Unaccompanied children: 'Where is my family?'*

THINK–PAIR–SHARE

How could toys, games, puppets or play help with any of these problems?

THINK–PAIR–SHARE

- **What are the biggest problems you think children in refugee camps face?**
- **What are the biggest problems you think child refugees who have moved to a new country face?**
- **How could you design a toy specifically to support a refugee child's emotional needs?**
- **How might knowing about a child's cultural or personal history help you design for them?**

! Take action

- ! Organize a toy drive, where classmates and teachers bring in new or lightly used toys to donate.
- ! Raise money for a charity supporting refugee children. For example: **www.sesameworkshop.org/donate**

ACTIVITY: Design brief and specifications

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

After **analysing** your own toys, you should be able to write a design brief to **describe** the toy you hope to make.

- **Describe the kind of toy you want to make and why.**
- **Describe the client you intend the toy to be for (age, gender, location) and how the toy suits their needs.**
- **Describe the impact you want your toy to make.**

You can use this information to make clear specifications.

You might choose to describe how you will make your toy. For example, is it a wooden toy made in the wood workshop, or a soft toy made with a sewing machine? Think about the factors you reflected on earlier in the chapter that will make your toy suitable for refugees. For example: Is it culturally sensitive? Does it work without batteries? Is it easy to clean? You should include this information in both your design brief and specifications.

Remember that your design brief is a descriptive statement, usually in paragraph form, which sums up your research so far (including details about the problem you will solve and how existing products have inspired you) and describes what you will make. Your specifications should be written as a checklist, usually in a table, and should be clear, objective and testable!

If you plan to donate your toy through a charity, you should check whether they have any rules too. They might have rules for shipping, such as size or weight. They may also have certain requirements about the materials used, to make sure they are safe.

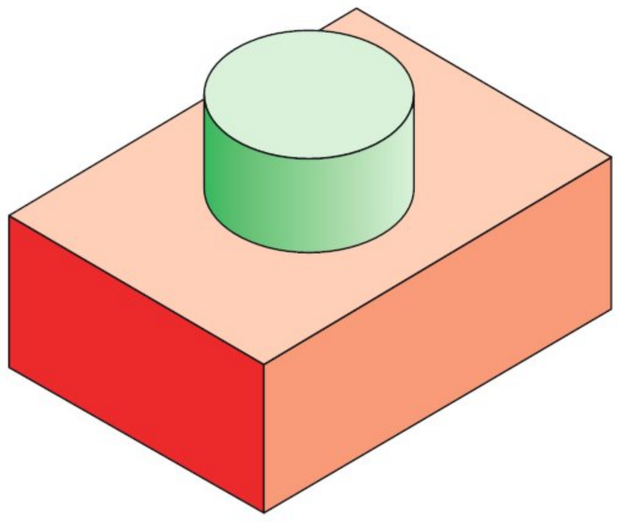
Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv) and Criterion B: Developing ideas (i).

Orthographic and isometric design

Orthographic and **isometric** are technical terms for different ways of showing the same object.

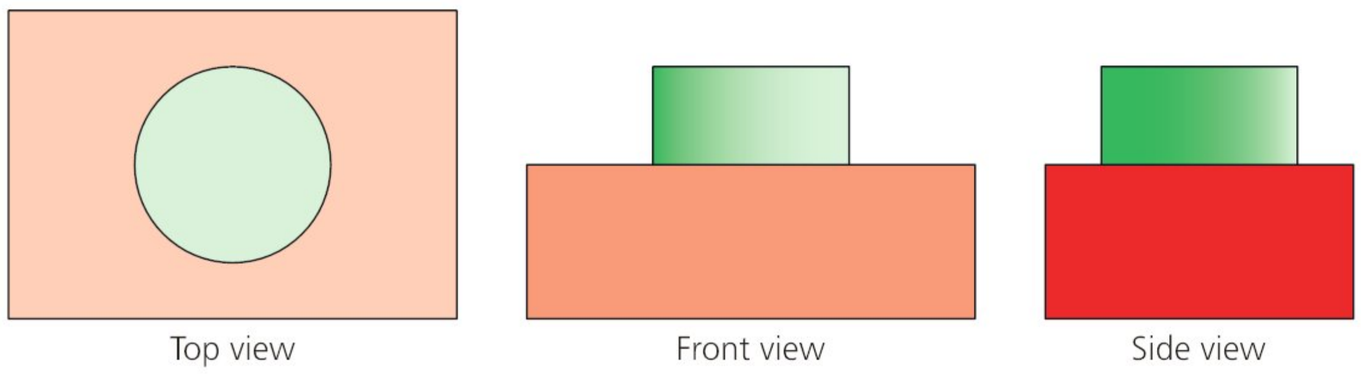
Isometric projection



■ **Figure 4.9** Isometric projection

Isometric projections show how the object actually looks to the human eye. When you draw the object, it will be 3-D, showing everything that you would be able to see if you were really looking at it. If you were drawing an isometric projection for a cube, for example, you might be able to see the top and two sides of it.

Orthographic projection



■ **Figure 4.10** Orthographic projection

Orthographic projections show each side of an object individually rather than how it appears to the human eye. They are really useful for manufacturing or for machines, as they show the object at all angles. If you were drawing an orthographic projection for a cube, for example, you would draw each side individually, to scale. You should always add clear measurements to this sort of drawing.

When do we use these types of drawings?

Isometric is best for showing another human your ideas. For example, you might do isometric sketches to get feedback from your client, target audience or an expert. These sketches would help the person viewing them get a rough idea of what the object will look like.

Orthographic drawings are great for showing technical details. If you were a designer sending your design to a manufacturer, you would send them orthographic projections so that they can see what the item would look like from every angle.

ACTIVITY: Initial sketches

ATL

- Communication skills: Organize and depict information logically

Now it's time to get designing!

You should sketch out at least four ideas for your toy. It makes it easier for others to understand if you add some basic labels, draw the idea from multiple angles and/or draw the item in use.

You will probably not be able to get feedback from your client, but you could get feedback from other children or from your design teacher. Make sure to document the feedback given. You should also **evaluate** your designs against your specifications.

Next, decide which design to develop further and **explain** why, based on the feedback and specifications.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

ACTIVITY: More detailed sketches

ATL

- Communication skills: Organize and depict information logically

Now you will draw a detailed sketch of your toy. Your new sketch should be clearly labelled and should include measurements, colours and materials. You may choose to **present** your final design as an orthographic or isometric projection.

Alongside your design, write a step-by-step plan to **describe** how to make the toy. Your plan should include the tools and materials needed, how long each step should take, and should include any technical vocabulary needed. You may even want to add further illustrations to **explain** technical details.

Your final sketch and your plan should be clear enough for someone else to be able to make your toy without your assistance.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iv) and Criterion C: Creating the solution (i).

ACTIVITY: Create your toy

ATL

- Creative-thinking skills: Create novel solutions to authentic problems

Take your time and make sure the product is safe. You might create your toy through:

- **sewing**
- **3-D printing**
- **woodwork**
- **model making**
- **laser cutting.**

Each of these methods have their own technical skills.

Make sure you label the photographs/screenshots of you making the product clearly, so it is obvious where you are using these skills.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii and iii).

REFLECTION SKILLS

Try the activities in Figure 4.11, not only to document the skills you showed, but also to reflect on the thinking you had to do.

SELF-REFLECTION 1

1 Name one of the technical skills that you used: _____

2 What did it look like? Add a photograph or drawing to the picture frame that shows you using this skill.

3 Add a caption that explains what is happening in your picture: _____

4 Add a thought bubble to your picture to show what you were thinking or what questions came up as you used this skill.

Figure 4.11 Self-reflection activities

SELF-REFLECTION 2

1 Name one of the technical skills that you used: _____

2 Explain what you were working on when you used this skill: _____

3 What did it sound like? Write something in the speech bubble that you said or thought that would help someone else know you were using this skill.

4 What did you learn, or what questions came up as you used this skill? _____

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (ii and iii).

ACTIVITY: Side by side

ATL

- Creative-thinking skills: Make unexpected or unusual connections between objects and/or ideas

Place a photograph of your toy next to your detailed sketch. Compare and contrast the two images. Use your specifications to help you too.

What changes did you make to the final product?

What parts turned out exactly as you had planned?

If you were to make it again, what would you change?

THINK–PAIR–SHARE

What impact do you hope your toy will make?

How do you want the child who receives your toy to feel?

Should we focus on meeting other basic refugee needs instead of toys?

Figure 4.12 shows some other examples of how designers are helping refugees.



Figure 4.12 Different ways designers can help refugees, including Night Loo (a safe, portable toilet for women in refugee camps), refugee shelters that can be built from concrete fabric in 24 hours, and pop-up kitchens for refugees and asylum seekers (created by Merrett Houmøller Architects)

ACTIVITY

Can you list other products that could be designed to help child refugees, either at refugee camps or when settling into a new home?

ACTIVITY

Use the 'Head, Heart, Hands' prompts in Table 4.1 to **create** a short pitch to show others what the refugee crisis is, why they should care and, finally, how they can take action too.

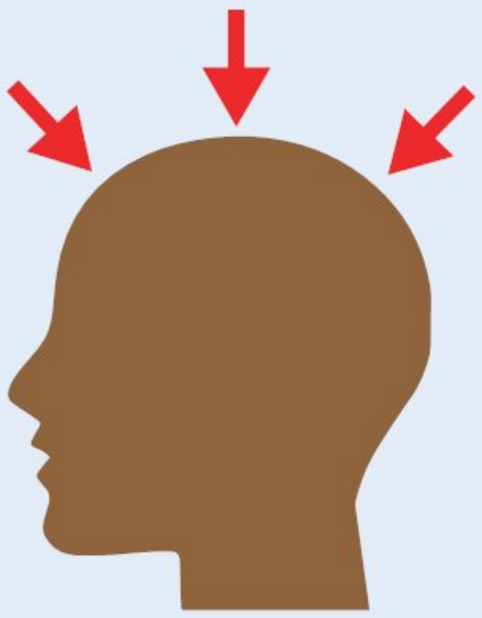
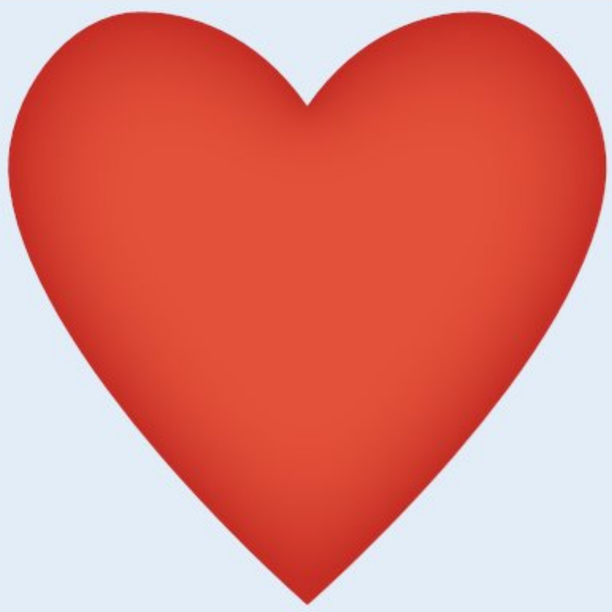
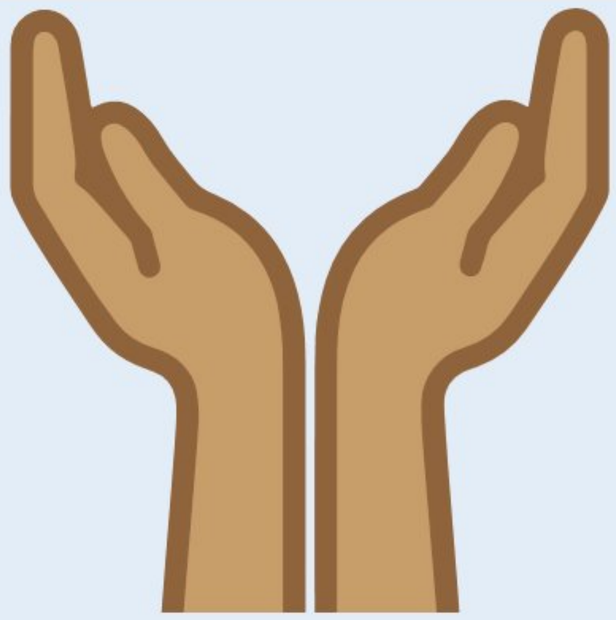
Head	Heart	Hands
		
What facts do I need to know?	Why should I care?	What should I do?
Be informed	Reflect	Act

Table 4.1 Head, Heart, Hands

! Take action

- ! Donate your toy! There are many organizations that distribute toys to refugees in camps or to refugees who have recently been granted asylum and are settling into a new country. Alternatively, donate toys that you have grown out of.
- ! Find out if there is a local organization that volunteers with refugee children in your community – or plan an event in your school. You could even start a Service as Action club.
- ! Think about other children who could benefit from toys, games or play. You could donate to these children or spend time playing with them. This could even be children in your own school.

Reflection

In this chapter we have researched the problems that refugees face. We explored how play could improve their lives and we took action by creating a toy for a refugee child.

Use this table to evaluate and reflect on your own learning in this chapter.		
Questions we asked	**Answers we found**	**Any further questions now?**
Factual: What is a refugee? How many children are refugees? What problems do refugee children face?		
Conceptual: How might a toy improve the life of a refugee? What would it feel like to be a refugee?		
Debatable: Should we be focusing on creating shelter/products that meet other basic needs of refugees, instead of toys?		

Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Critical-thinking skills					
Creative-thinking skills					
Transfer skills					

Learner profile attribute	Reflect on the importance of being open-minded for your learning in this chapter.
Open-minded	

5 Can we use emojis to show we are internationally minded?

We can **adapt** to our ever-changing world by **inventing** new **innovative** ways to **communicate**.



■ **Figure 5.1** Emojis

CONSIDER THESE QUESTIONS:

Factual: What does it mean to be internationally minded? What is an emoji? What emojis already exist? What is the history of emojis?

Conceptual: How can we categorize existing emojis? Who do we use emojis to communicate with?

Debatable: Are emojis a language?

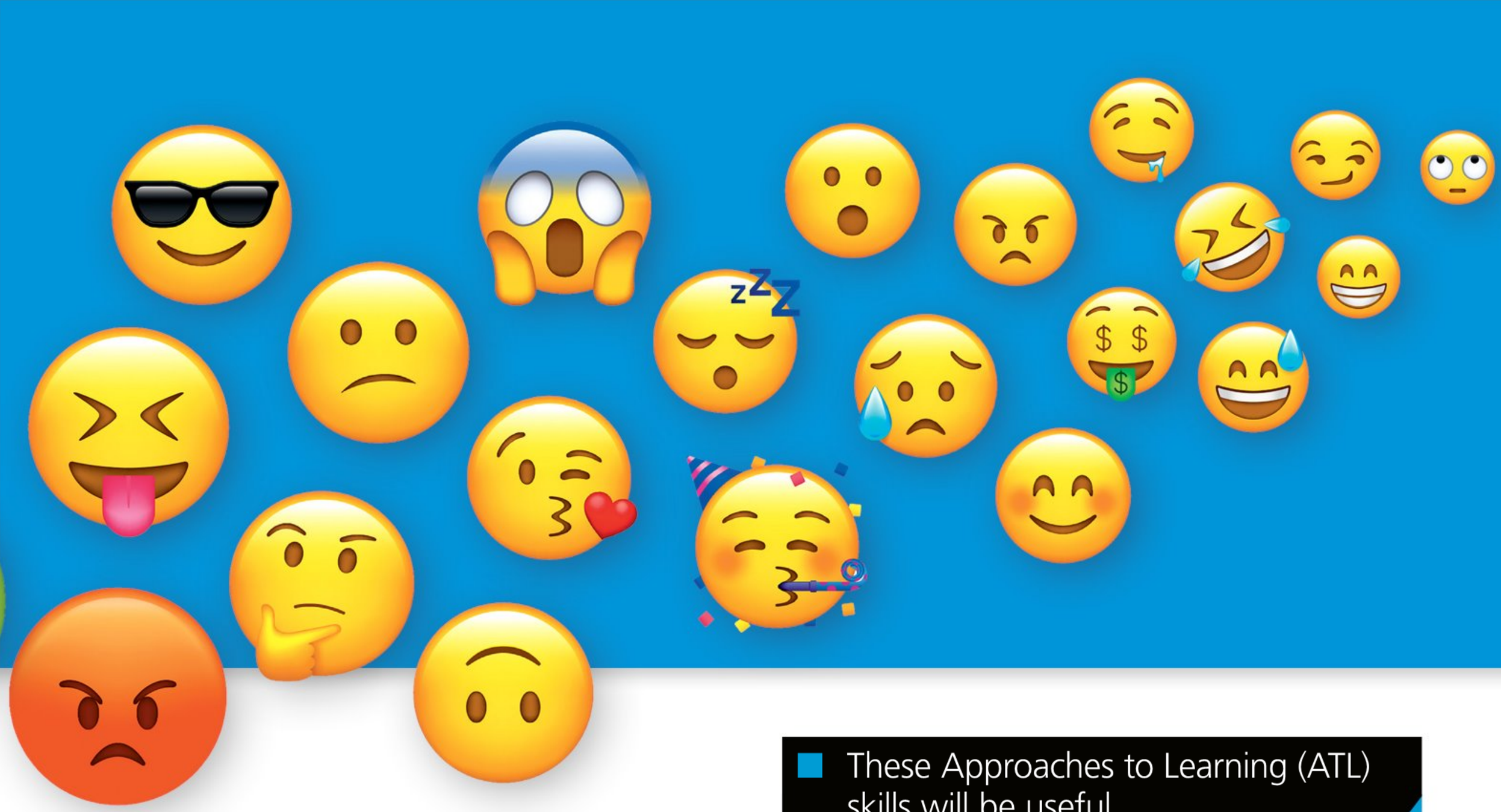
Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

emoji
international-mindedness

IN THIS CHAPTER WE WILL …

- **Find out** how technology helps us to communicate.
- **Explore** how emojis have become a tool for communication.
- **Take action** by designing emojis that help us communicate better as internationally minded citizens.



We will reflect on this learner profile attribute …

- Communicators – we will strengthen this attribute by analysing how we communicate already and make a set of emojis to allow for easier conversations about and between cultures.

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills

INTERNATIONAL-MINDEDNESS

'The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.'

The IB's learner profile shows the attributes an internationally minded person should aim to fulfil.

There are many definitions of international-mindedness, so it is important to take the following points into consideration.

Internationally minded people are aware that:

- we are all connected
- our actions impact others
- everyone has a culture
- everyone has their own 'normal'.

When exploring a new place or meeting people from a different background, it can be easy to sometimes think of them as 'different' but – guess what – to them, you are different too!

THINK–PAIR–SHARE

Have you ever visited somewhere new and found it 'weird'?

What does it mean to be internationally minded?

Watch Derek Sivers' TED Talk 'Weird, or just different?':
www.ted.com/talks/derek_sivers_weird_or_just_different?

ACTIVITY: IB designers

ATL

- Transfer skills: Inquire in different contexts to gain a different perspective

List the ten IB learner profile attributes.

How can a designer show these attributes?

An example might be: 'A **caring** IB designer uses recycled material.'

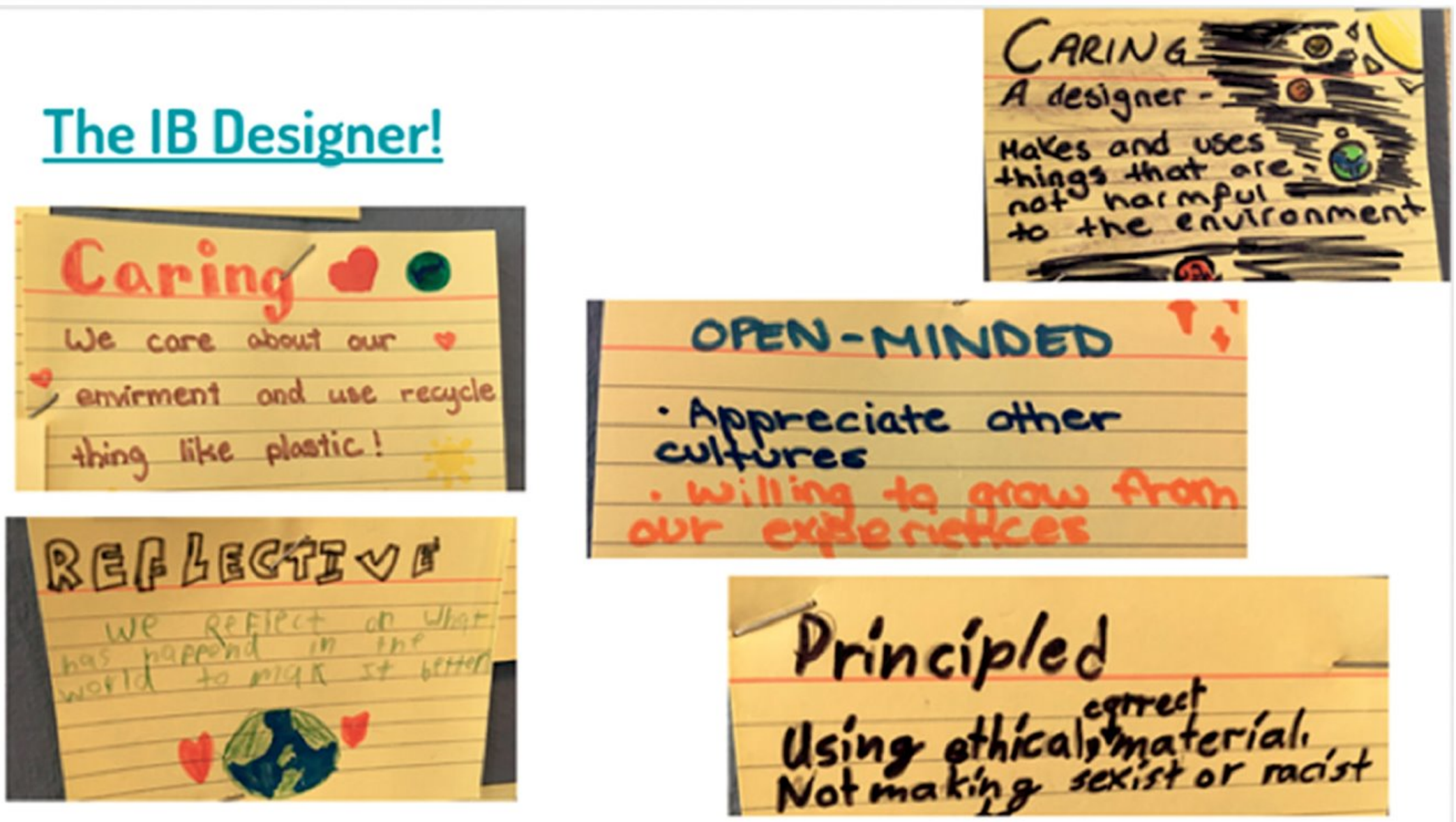


Figure 5.2 Attributes of an IB designer

ACTIVITY: Differences and similarities

ATL

Critical-thinking skills: Consider ideas from multiple perspectives

Imagine someone is visiting your home country for the first time. What might they find 'weird'? This could include accents, food, customs, traditions, clothes and more.

What similarities might someone have with you, regardless of where they are from in the world?

BEYOND FOOD, FLAGS AND FESTIVALS

Often the first thing we think about when summarizing another country's culture is their food, flags and symbols, festivals and celebrations, and sometimes music. To be internationally minded we have to go a lot deeper than this and think about other aspects that make up culture.

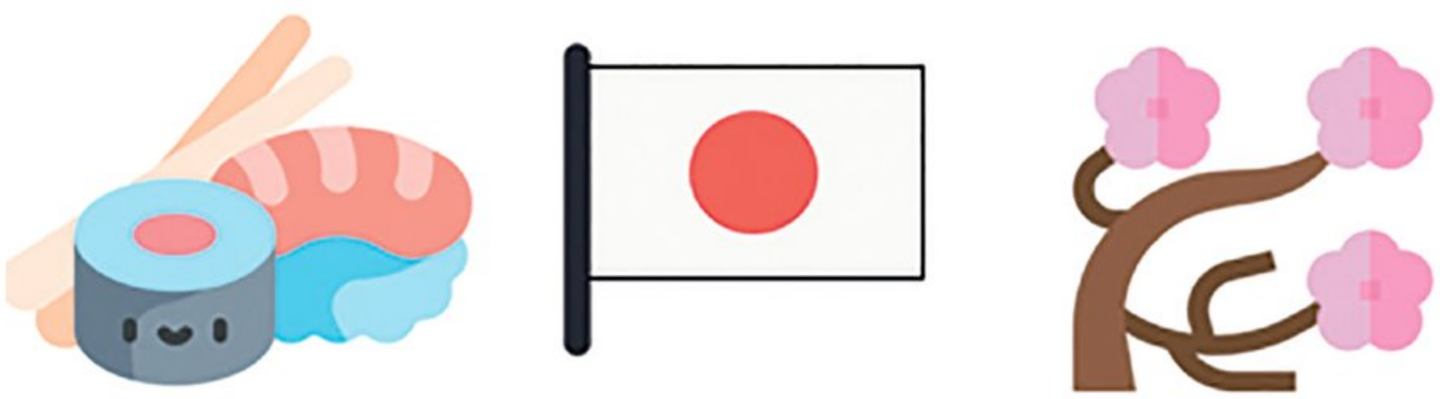


Figure 5.3 Emojis for food, flags and festivals

The article 'Beyond Food, Festivals, and Flags' explains that being internationally minded includes:

- *Knowledge and understanding beyond one's own nationality.*
- *Awareness and understanding of the interdependence among peoples.*
- *Awareness and understanding of the interdependence among countries.*
- *Awareness and understanding of the independence of people and countries.*
- *Awareness and understanding of the similarities and differences among peoples.*

THINK–PAIR–SHARE

How does your school share and celebrate different cultures?

How does your school practise international-mindedness?

THINK–PAIR–SHARE

How might ATLs help you learn about, understand and appreciate other cultures, making you more internationally minded?

WHAT IS AN IB EDUCATION?

IB programmes ask students to recognize 'their common humanity and shared guardianship of the planet'. Central to this aim is international-mindedness:

> *'International-mindedness is a multifaceted and complex concept that captures a way of thinking, being and acting that is characterized by an openness to the world and a recognition of our deep interconnectedness to others.*
>
> *'To be open to the world, we need to understand it. IB programmes therefore provide students with opportunities for sustained inquiry into a range of local and global issues and ideas. This willingness to see beyond immediate situations and boundaries is essential as globalization and emerging technologies continue to blur traditional distinctions between the local, national and international.'*

The IB has many things, apart from the IB learner profile, that help us become internationally minded.

It also helps students to develop their Approaches to Learning (ATL) skills. Some specific ATLs that support international-mindedness include:

- **demonstrate** awareness of media interpretations of events and ideas (including digital social media)
- consider ideas from multiple perspectives
- practise empathy
- recognize unstated assumptions and bias
- use intercultural understanding to interpret communication
- listen actively to other perspectives and ideas
- seek a range of perspectives from multiple and varied sources.

THINK–PAIR–SHARE

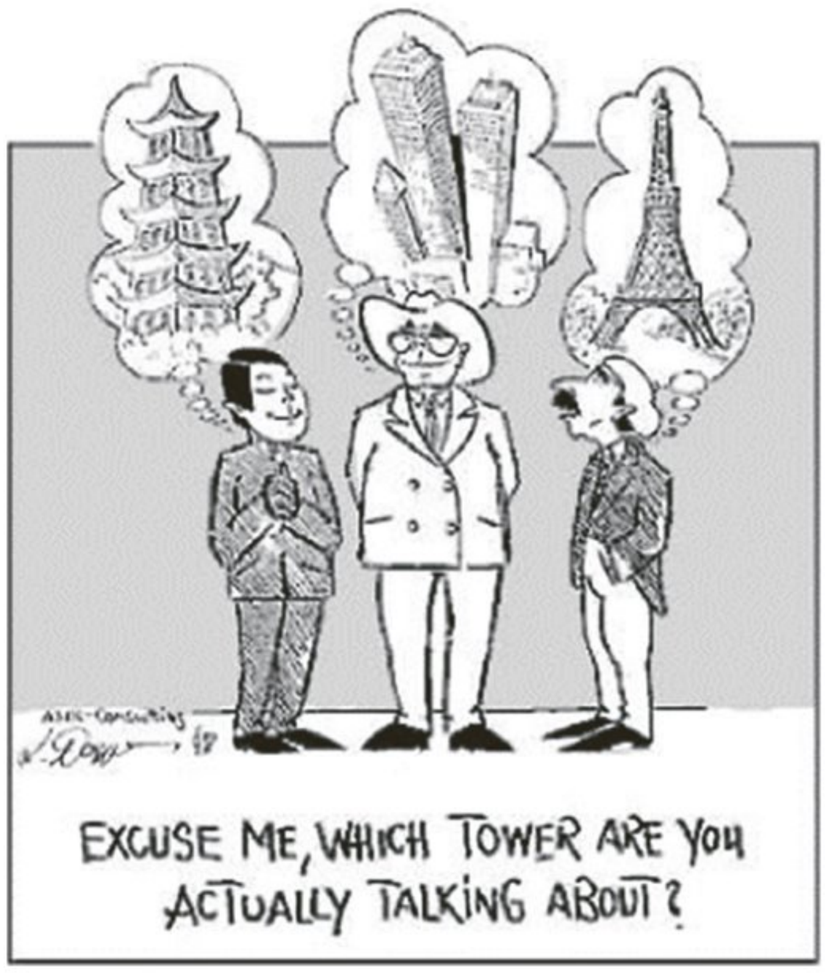


Figure 5.4 International-mindedness

What might this image say about international-mindedness?

ACTIVITY: Look at the global context

ATL

- Communication skills: Make effective summary notes for studying

Look at Table 5.1. Read through the IB global contexts and their descriptions, and highlight any words that make you think about international-mindedness. How might each one help us to become more internationally minded?

Assessment opportunities

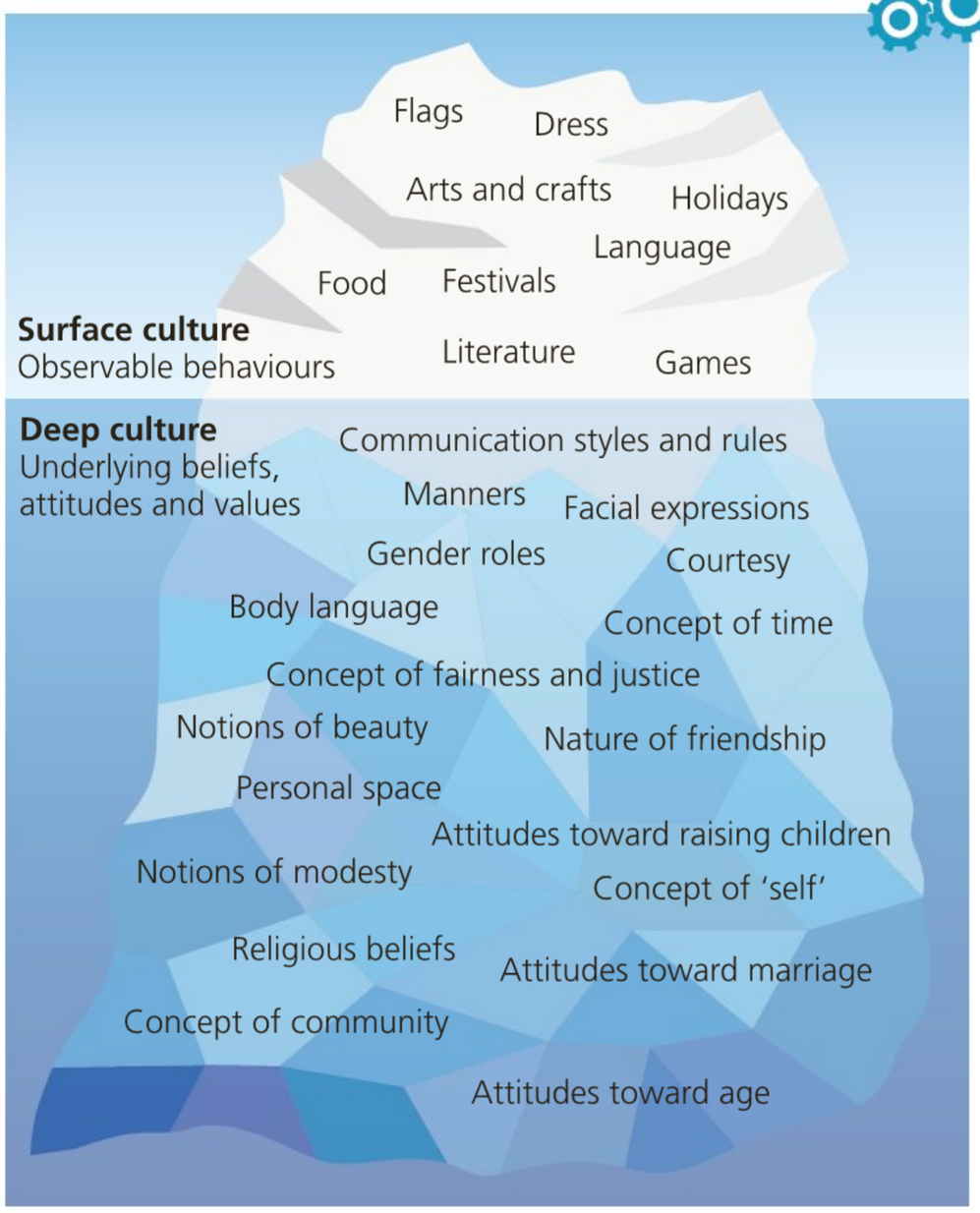
- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Critical-thinking skills: My culture

Sometimes it is easy to think about other people as having a culture, and to think about your own background as the 'default' or 'norm'. It's the same as when you meet someone who sounds different to you; you might say 'You have an accent…' but really everyone has an accent, so they are probably thinking exactly the same thing about you.

Before thinking about other people's cultures, it is important to think about your own. Many things make up your cultural identity: some are obvious and visible to others, but many are hidden below the surface, rather like an iceberg.

Figure 5.5 shows a 'cultural iceberg', describing parts of culture that can be easy to observe, and others that are hidden deeper. Use it as a starting point to make your own 'cultural identity iceberg'. When you have finished, share your iceberg with a classmate.



■ **Figure 5.5** A cultural iceberg

Global context	Focus question and description
Identities and relationships	Who am I? Who are we? Students will explore identity; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities and cultures; what it means to be human.
Orientation in space and time	What is the meaning of 'where' and 'when'? Students will explore personal histories; homes and journeys; turning points in humankind; discoveries; explorations and migrations of humankind; the relationships between, and the interconnectedness of, individuals and civilizations, from personal, local and global perspectives.
Personal and cultural expression	What is the nature and purpose of creative expression? Students will explore the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.
Scientific and technical innovation	How do we understand the world in which we live? Students will explore the natural world and its laws; the interaction between people and the natural world; how humans use their understanding of scientific principles; the impact of scientific and technological advances on communities and environments; the impact of environments on human activity; how humans adapt environments to their needs.
Globalization and sustainability	How is everything connected? Students will explore the interconnectedness of human-made systems and communities; the relationship between local and global processes; how local experiences mediate the global; the opportunities and tensions provided by world interconnectedness; the impact of decision-making on humankind and the environment.
Fairness and development	What are the consequences of our common humanity? Students will explore rights and responsibilities; the relationship between communities; sharing finite resources with other people and with other living things; access to equal opportunities; peace and conflict resolution.

■ **Table 5.1** IB global contexts, their focus questions and descriptions

What is an emoji?

WHAT IS THE HISTORY OF EMOJIS?



Figure 5.6 A selection of emojis



Figure 5.7 The 'face with tears of joy' emoji

Emojis are electronic symbols that represent everything from common objects to facial expressions, food, weather and animals. They first appeared on Japanese mobile phones in the 1990s but became popular in the 2010s. In 2015, the 'face with tears of joy' emoji was Oxford Dictionaries' 'Word' of the Year, and *The Emoji Movie* was released in 2017. Emojis are everywhere now and are used for regular communication.

Link: **https://languages.oup.com/word-of-the-year/2015**

ACTIVITY: Existing emojis

ATL

- Information literacy skills: Use critical-literacy skills to analyse and interpret media communications

Look at the existing emojis shown in Figure 5.6. How might cultural background help someone to understand these emojis? Who might understand what these emojis represent easily and who might not?

If you are uncertain of what they mean, visit **https://emojipedia.org**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

EXTENSION

Read the WIRED Guide to Emoji: **www.wired.com/story/guide-emoji**

ACTIVITY: Emojis through time

ATL

- Information literacy skills: Evaluate and select information sources and digital tools based on their appropriateness to specific tasks through time



Figure 5.8 Early emojis

How many of these early designs match up to today's emojis? Pick out ten of them and find their modern-day equivalent. How much have they changed? As the graphics have improved, have they become more useful, or do those emojis hold the same value and impact as they had originally?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Design situation

Select your design situation from the following:

- Design ten new emojis for a large communications company. They want their emojis to be universally understood and easily used by anyone from any cultural background.
- Redesign ten existing emojis to make them more internationally minded.
- Design ten new emojis that help to show a previously unrepresented culture.
- A new communications company wants you to create ten simple emojis to help them communicate with their clients. Think about the ten most useful emojis and design them for the company.
- The IB would like you to design ten emojis that they can use in textbooks, presentations and on their website.

ACTIVITY: Your project

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

Which prompt have you chosen to explore and why?

What problems might be hidden in the prompt that you will have to solve?

What impact does your design situation have the potential to make?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

‘WOKE’ EMOJIS

In recent years tech companies have tried to make emojis more representative of a broader range of people. This has included both adding new emojis and changing existing ones. There have been releases of emojis with different skin tones, same-gender couples, gender-neutral people, emojis wearing hijabs, emojis in wheelchairs, a prosthetic arm thumbs up and more. In 2016, Apple changed their gun emoji to a water gun. Over the next couple of years most other tech companies also changed their gun emojis to water guns.

ACTIVITY: Emojis

THINK–PAIR–SHARE

- **Do you think changing the gun emoji to a water gun was a good or a bad idea? Why?**
- **Would you consider emojis to be a language? Why? Why not?**
- **Is your culture represented in your emojis? Are there any important aspects of your life that cannot be symbolized through emojis?**

▼ Links to Individuals and societies

What does woke mean? Find out more about it in this article: **https://inews.co.uk/news/uk/woke-what-mean-meaning-origins-term-definition-culture-387962**

Critical-thinking skills

Think about an important event in your culture. This could include a religious event, a national holiday, a traditional story, a way of celebrating with loved ones, or more.

Can you retell this cultural event easily using emojis?

Do you think the current popular emojis are diverse enough for most people to be able to retell their own cultural stories? Why? Why not?

Think about the people who might not be represented by common emojis today.

MATE MATTERS

Mate is a caffeinated drink that is drunk around the world, but it is incredibly popular in many countries in South America.

> *'Drinking mate is a tradition of the indigenous Guarani and Kaingang people dating from thousands of years before the Christian era. Today, the custom is widespread in the south of South America, including Chile and Paraguay, as well as across the Atlantic in countries like Germany, Lebanon and Syria (which is Argentina's biggest importer of yerba mate in the world). It's … served in a special cup, usually made of wood, and drunk through a silvery straw.' – Fernanda Canofre, 'The case for the mate emoji and why it's important for South America'*



■ **Figure 5.9** Mate, and mate emojis

In 2017, five Argentinian designers attending a hacker event decided to create the world's first mate emoji. They initially thought about designing emojis representing food that is popular in Argentina, but ended up focusing on mate because of its cultural significance and popularity in many different cultures. In 2019, the emoji was widely adopted.

ACTIVITY: Face-to-face interview

■ ATL

■ Information literacy skills: Access information to be informed and inform others

Although this chapter focuses on digital communication, for this activity you will interview someone face to face.

Think of someone that you know who, perhaps because of their age, race, gender or cultural background, might not be able to fully express themselves using emojis today.

Decide on a range of questions you might want to ask. Make sure you ask open questions – these are questions that won't get a short answer, like 'yes' or 'no', but encourage your interviewee to elaborate on their own ideas. If you find asking open questions difficult, add the magic word 'why?' into your questions.

Before your interview, highlight the questions that are most important to you. If the interviewee gives you short responses to these questions, you might need to come up with extra questions during the interview to dig a little deeper.

◆ Assessment opportunities

◆ This activity can be assessed using Criterion A: Inquiring and analysing (ii).

Who do we use emojis to communicate with?

When you go to add an emoji to an email, message, photograph or social media, the emojis are often sorted into different categories, such as weather or animals, but your most-used emojis usually show first. Designers create this feature to improve the user's experience, as it saves people time.

ACTIVITY: Your most-used emojis

ATL

- Transfer skills: Inquire in different contexts to gain a different perspective

Take a screenshot of your most-popular/most-used emojis.

Why do you think you use these emojis so often? Do you notice any themes? Do you think your peers will have similar emojis in their most popular list? What about your teacher? What about your parents? What about a notable or famous person you admire? What might your most popular emojis say about you?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

THINK–PAIR–SHARE

Who would you, and who wouldn't you, use emojis to communicate with? Why?

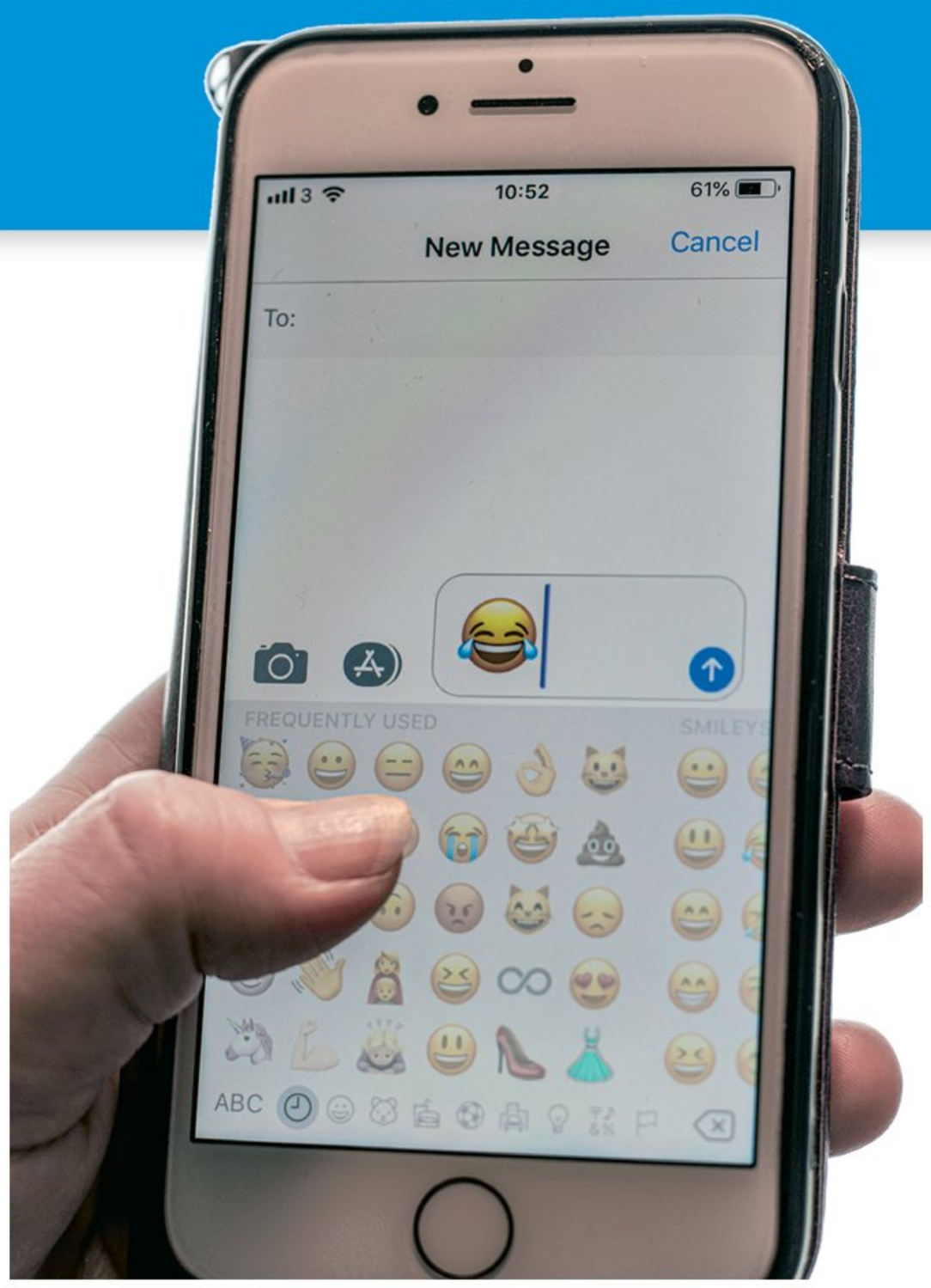


Figure 5.10 Someone's most-popular/most-used emojis

ACTIVITY: IB emojis

ATL

- Communication skills: Interpret and use effectively modes of non-verbal communication

List all the key words that you associate with the IB. To get you started, think about the IB learner profile, Approaches to Learning and global contexts. You might want to interview your teacher or look on the IB website to help you.

Can you find emojis to match these words or ideas?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

TUG FOR TRUTH

Many companies have used emojis to communicate with their target audience. In 2015, the White House even produced an infographic full of emojis. If you would like to find out more about it visit **https://obamawhitehouse.archives.gov/share/infographic-about-millennials**

Think about your opinion on the following statement:

> 'Companies, like the IB, should use emojis to communicate to their audience.'

Draw a long line on the whiteboard or on a large piece of paper. On one end write 'YES' and on the other end write 'NO'.

Each person is invited to add to the 'tug of truth' line, but can only add the following:

- **evidence – facts that support your answer**
- **questions – questions about the initial statement, questions asking for more information, or 'what if' questions ('what if we tried … what would the results be?').**

You could add your ideas in pencil, or use sticky notes so that you can move them around if needed.

After completing the activity, discuss the new things you learnt and whether your answers have changed at all.

ACTIVITY: Design brief

ATL

- Communication skills: Paraphrase accurately and concisely

Look back at the design situation you chose. Using information learnt from the previous activities, **describe** the set of emojis that you wish to make and the problem that they will solve. Remember, a good brief sums up the key information from your research, including information from any articles that you have read, interviews you have conducted and even emojis you have analysed.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

ACTIVITY: How many emojis

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

1. **Guess how many standard emojis there are (this does not include variations – for example, there is one onigiri emoji – but different companies/platforms have different versions).**
2. **Go online to research how many emojis there are. You could also look at https://emojipedia.org/faq How close was your guess?**
3. **Look back at the design situation you selected and think about the problem you are trying to solve. You are only required to design ten new emojis, so you will have to try to prioritize.**
4. **List the ten emojis you will make.**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

MAKING EMOJIS LOOK LIKE THEY ARE PART OF A SET

Before designing your set of emojis, you need to decide on some common factors that will tie them together. Some things you might want to think about are colour palettes and line thickness.

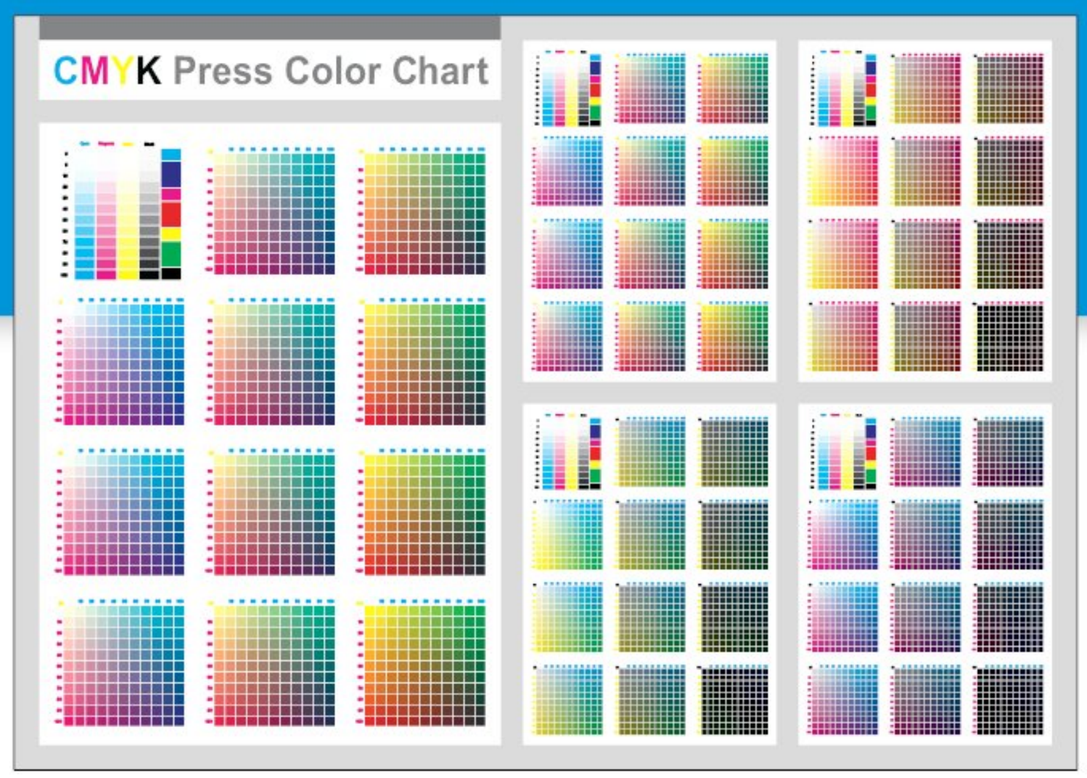


Figure 5.11 Digital colour palettes

Colour palettes

Imagine that you are an artist and that you only have one paint palette with a small selection of colours … and these colours can't mix. Picking out a small selection of colours will make sure that your designs look like they are part of a series; for example, if you were designing a sunflower, a sun and a banana, they could all use the same shade of yellow.

Make sure that when you choose your colour palette you have enough colours to cover everything you want to design.

There are a number of websites that can help you to pick out colours from a photograph. You upload the photograph then select the different pixels where you like the colour, and the website will tell you the exact name of the colour. This is really helpful if you are designing digitally, as you can use the colour code (or colour value) in your software.

In many tools, including Adobe Illustrator, you can even **create** colour palettes, so you only see the colours you selected when making your illustration.

Look at Adobe's colour inspiration page. This has colour palettes, along with photographs and illustrations that use the colours from those palettes: **https://color.adobe.com/explore**

You could also think about line thickness; the type of brushes, pens or pencils you will use (digitally or physically); how simple or complex your emojis will be; and even the types of shapes that will exist in your emojis. You can use this information when creating your design specifications.

Creating, thinking and communication skills

What do the colours you have chosen communicate to the audience? What adjectives would you use to **describe** these colours?

ACTIVITY: Design specifications

ATL

- Transfer skills: Combine knowledge, understanding and skills to create products or solutions

Along with the details you picked to tie your emojis together, such as the colour palette and line thickness, you might include the following in your design specifications:

- **pixel size**
- **file size**
- **who you think will use your emojis**
- **who or what your emojis will represent**
- **where your emojis will be used.**

You could also think about specifications linked to how likeable or recognizable your emojis are. Remember to base your specifications on what you have learnt so far.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

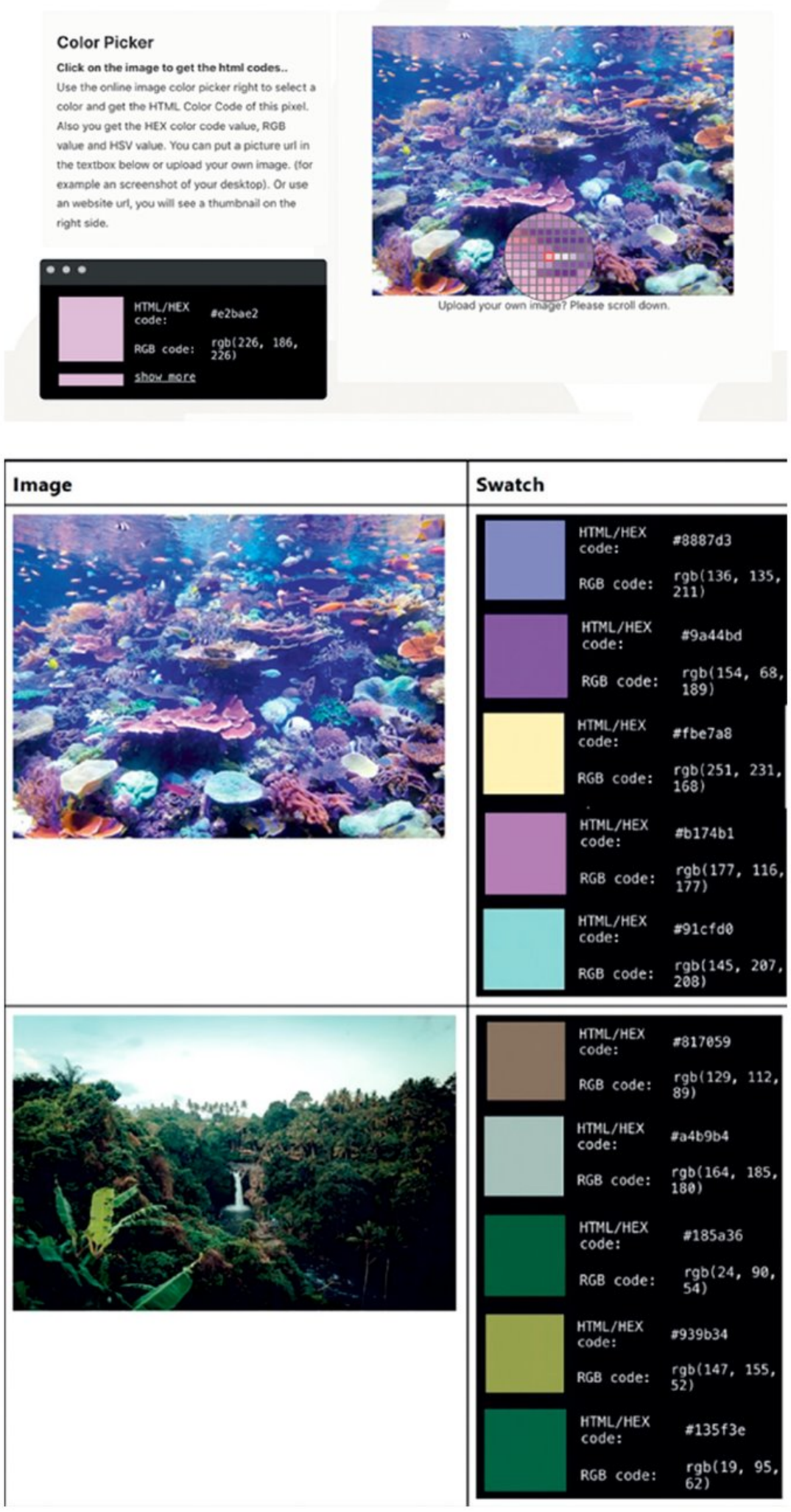


Figure 5.12 Colour palettes

ACTIVITY: Get doodling!

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Now that you have your list of ten emojis, it is time to get your ideas out! Do not worry about being too neat when coming up with your initial ideas. Do it by hand, with pencils, or use a simple digital program, such as Google Drawings. When doing initial visual brainstorming, it is best to go for quantity over quality – this can be quick and messy! Get down as many ideas as you can, as a 'bad' idea might give you inspiration for a 'good' idea. Try to do ten quick sketches for each emoji idea – this will mean you have 100 design sketches!

When you have finished, go through them and circle the best design for each emoji. You might circle two and decide to combine the two ideas together. This is even better if you can get feedback from other people, especially your target audience. Try to **explain** what you like about them best.

When you have picked out the ten final emojis, it is worth sketching them again neatly, with the correct colours and to scale. This will help you when you make your final digital designs.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).

ACTIVITY: Creating a logical plan

ATL

- Organization skills: Use appropriate strategies for organizing complex information

Emojis need to be quite simple as they must be easily recognizable and will be very small when used. They are not complex graphics, so you should use this opportunity to practise creating a logical plan to make them.

When you make your plan, it should be clear enough for you to be able to send it to another designer, and for them to be able to make your final product without further instruction.

You could **present** your logical plan as a list or table. You should be very specific, so include specific colour values and the names of any digital tools you want to use (for example 'paint brush tool' or 'eye-dropper tool').

If you have any shared shapes in your different emojis, you can copy and paste that part of the instruction, or direct someone to repeat particular steps.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

When you have finished writing a logical plan for one of your emojis, swap your instructions with a classmate. Without giving each other any further advice or support, see what you produce when you follow each other's plan.

- Did either of you have any difficulties?
- Were you able to make the emojis in the time you had planned?
- Do the finished emojis look how you imagined?

After this activity, consider what changes you can make to improve your plan. You might want to repeat the experiment with your improved plan and another classmate.

The importance of clear instructions is perfectly illustrated in the YouTube video 'THIS 'EXACT INSTRUCTIONS CHALLENGE' IS SO HILARIOUS': **www.youtube.com/watch?v=Ct-lOOUqmyY**

ACTIVITY: What ties these together?

ATL

- Creative-thinking skills: Make unexpected or unusual connections between objects and/or ideas



Figure 5.13 New modern emoticons

Look at the emojis above. Obviously they are all the same shape and size, but can you see any other similarities between them? For example, do any of them have the same eyes or mouth? How might having similarities save the designer time and help to tie the emojis together visually?

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii, iii and iv).

GET MAKING … AND USE LAYERS!

Take screenshots when you are creating your emojis to show the different tools you are using and the different stages of each design. This is a great way to show the process and to show off your technical skills.

You should be using **layers** in your design. This is where each element of a design is made on a separate layer that is overlaid on top of the previous one. For example, imagine that the bottom layer is a yellow circle for the face, the next layer might have the mouth, the next the whites of the eyes, and the next the black part of the eyes.

By keeping the layers separate, you can make changes to individual layers easily, instead of having to redo the whole design. In a real design situation, the client might come back to you with changes, such as asking to make the yellow a darker shade or changing the thickness/weight of certain lines. This will be easier to do if you have been working in layers.

Layers will also be helpful if you are making a series of similar emojis, for example if you are making a person emoji and want to have variations in different skin shades.

If you make changes while creating your design, be sure to document what these are and why you made them. Ideally, you should only make changes if it improves the final design, not because you ran out of time.

ACTIVITY: Do my emojis work?

ATL

- Creative-thinking skills: Make guesses, ask 'what if' questions and generate testable hypotheses

When you have finished creating your emojis, look back at the design situation and decide on the best way to **evaluate** the success of your product, for example:

- **Design situation: You have been commissioned to design ten new emojis for a large communications company. They want their emojis to be universally understood and used easily by anyone from any cultural background.**
- **Possible testing methods: You could send a survey out with your emojis asking people of various ages, races, genders and cultural backgrounds to guess what the emojis symbolize. You might see if your teacher can help send your survey to testers in other countries too. The survey might give them multiple-choice answers, or maybe you could collect single-word answers, then make a word cloud for each emoji, as shown in Figure 5.14.**



Figure 5.14 Emoji word cloud

You should also look at your design specifications and see which you met fully, partially or didn't meet at all. For those that you did not meet, was this because you made changes? How did not meeting these specifications change the success and impact of your emojis?

Even if you met all your specifications successfully, you might still think that your product could be improved. Make sure you document your ideas for improving your design further.

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i, ii and iii).

Are emojis a language?

DISCUSS

What impact will your emojis have on the way your user can communicate?

THE THREE WHYS

1. **Why might the emojis I designed matter to me?**
2. **Why might they matter to people around me (family, friends, city, nation)?**
3. **Why might they matter to the world?**

◆ Assessment opportunities

- ◆ This activity can be assessed using Criterion D: Evaluating (iv).

I USED TO THINK … NOW I THINK …

Think back to your knowledge and understanding of emojis before you began this chapter. Use the format:

- **I used to think …**
- **Now I think …**

What has changed and why?

! Take action

- ! Did you design a really powerful emoji that you believe should be a real emoji? Why not start an online campaign!
- ! Maybe in your research you noticed that your school, or a club that you belong to, could have more internationally minded material, for example on their website. Why not write a letter to ask for a change?

Reflection

In this chapter we have looked at how technology, especially the use of emojis, can help us to communicate. We have taken action by designing emojis that help more people to communicate.

Use this table to evaluate and reflect on your own learning in this chapter.					
Questions we asked		**Answers we found**			**Any further questions now?**
Factual: What is an emoji? What emojis already exist? What is the history of emojis?					
Conceptual: How can we categorize existing emojis? Who do we use emojis to communicate with?					
Debatable: Are emojis a language?					
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Organization skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					
Transfer skills					
Learner profile attribute	Reflect on the importance of being a good communicator for your learning in this chapter.				
Communicator					

6 How can we provide access to clean water for all?

Products and **resources** designed to benefit individuals can have an impact on a whole **community**.

CONSIDER THESE QUESTIONS:

Factual: Who doesn't have access to clean water? What problems can drinking dirty water cause? What products already exist to clean water?

Conceptual: Why do some people not have access to clean water? How can easy access to clean water change a community?

Debatable: Will access to clean water benefit communities more than access to any other resources?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

diarrhoea dehydration
filtration



Figure 6.1 Epidemics, viruses, bacteria in water, diseases of dirty hands

IN THIS CHAPTER WE WILL …

- **Find out** how many people do not have access to clean water.
- **Explore** ways designers can improve access to clean water.
- **Take action** by designing a solution to provide access to clean water.

These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills

THINK–PAIR–SHARE

According to the UN:

> 'Water is complex because it is linked to almost everything in the world.'

List all the parts of your life that rely on water.

Share your list with a partner. Did they share anything you missed? Add it to your list.

Share your ideas as a class. How long a list can your class make?

Now, as a class, underline any parts of the list that require clean water.

How much water do you think you consume daily (include water used to create the food you eat)? Check to see if you are right on: **https://thewaterweeat.com**

3–2–1 BRIDGE!

Before we begin this chapter, think about your initial responses to the topic of water:

3 Thoughts or ideas
2 Questions
1 Analogy

We will do this activity again at the end of the chapter to see how our thinking has changed.

We will reflect on this learner profile attribute …

- Knowledgeable – we will use our knowledge to better engage with and take action on a water-related issue; we will make ethical decisions and problem solve to make a product that could better the lives of others.

Water is as important to life as the air we breathe. We need it for drinking, but the food we eat relies on it too. However, many people have poor access to clean water. This may be because of water scarcity (living somewhere hot, without convenient access to water, for example). Others only have access to dirty water, usually because of dumping, litter and lack of access to proper sanitation. In this chapter, we will be focusing mostly on creating access to clean drinking water.

Many water filters exist, but the problems related to drinking dirty water also still exist. We will think about why these filters are not being used, and we will design our own user-friendly filters.

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

What problems can drinking dirty water cause?



Figure 6.2 Water cans

WATER FACTS

According to WATERisLIFE, 1.8 billion global citizens lack access to safe drinking water, one in five deaths each day are from water-related diseases, and 90 per cent of those deaths are children under five.

The World Health Organization estimates that 2 billion people worldwide use drinking water sources that are contaminated with faeces. Drinking dirty water can cause many diseases including dracunculiasis (guinea-worm disease), cholera, diarrhoea, hepatitis, leptospirosis and typhoid.

Guinea-worm disease is spread through copepods – tiny crustaceans no more than a couple of millimetres long, that live in water – which, in a few countries in Africa, can carry guinea-worm larvae. When people drink contaminated water, the larvae hatch and a large worm grows inside the body, emerging from the person's leg or foot about a year later.

However, filtering the water – even through a simple mesh – can remove the copepods and make it 100 per cent free of guinea worm.



Figure 6.3 Guinea-worm disease

In 1986, 3.5 million people in Africa were reported to be afflicted with guinea-worm disease. Thanks to the efforts of many organizations, the disease has almost been wiped out, with only a few dozen cases a year now. Organizations such as the Carter Center and WATERisLIFE provide free filters to those living in areas with guinea worm.

ACTIVITY: Dirty water diseases

ATL

- Information literacy skills: Access information to be informed and inform others

Spend five minutes online to find out the link between dirty water and one of the following diseases. See if you can find the cause, symptoms and cure:

- **cholera**
- **diarrhoea**
- **hepatitis**
- **leptospirosis**
- **typhoid.**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Information and media literacy skills

Most search engines allow you to search for something on a specific website. In Google, for example, you can use the advanced search – put the website name in after 'site or domain' and then the topic you want to search for after 'all these words'. The advanced search feature even allows you to search for file types or exact phrases.

Try using the advanced search features to search for your diseases on the websites of the World Health Organization or the US Centers for Disease Control and Prevention:

www.who.int

www.cdc.gov

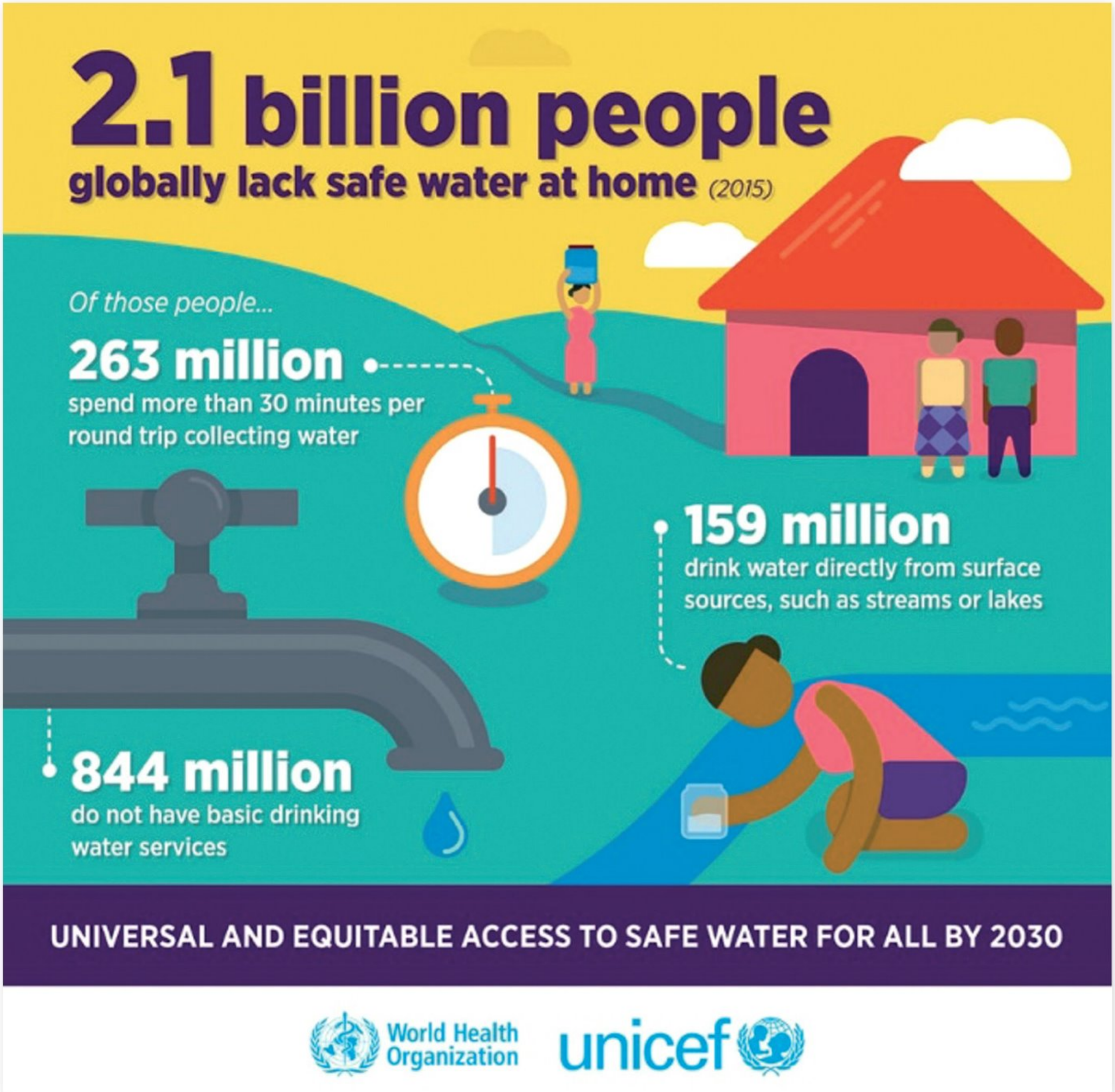


Figure 6.4a Safe and Affordable Drinking Water: By 2030 the UN's goal is to achieve universal and equitable access to safe and affordable drinking water for all

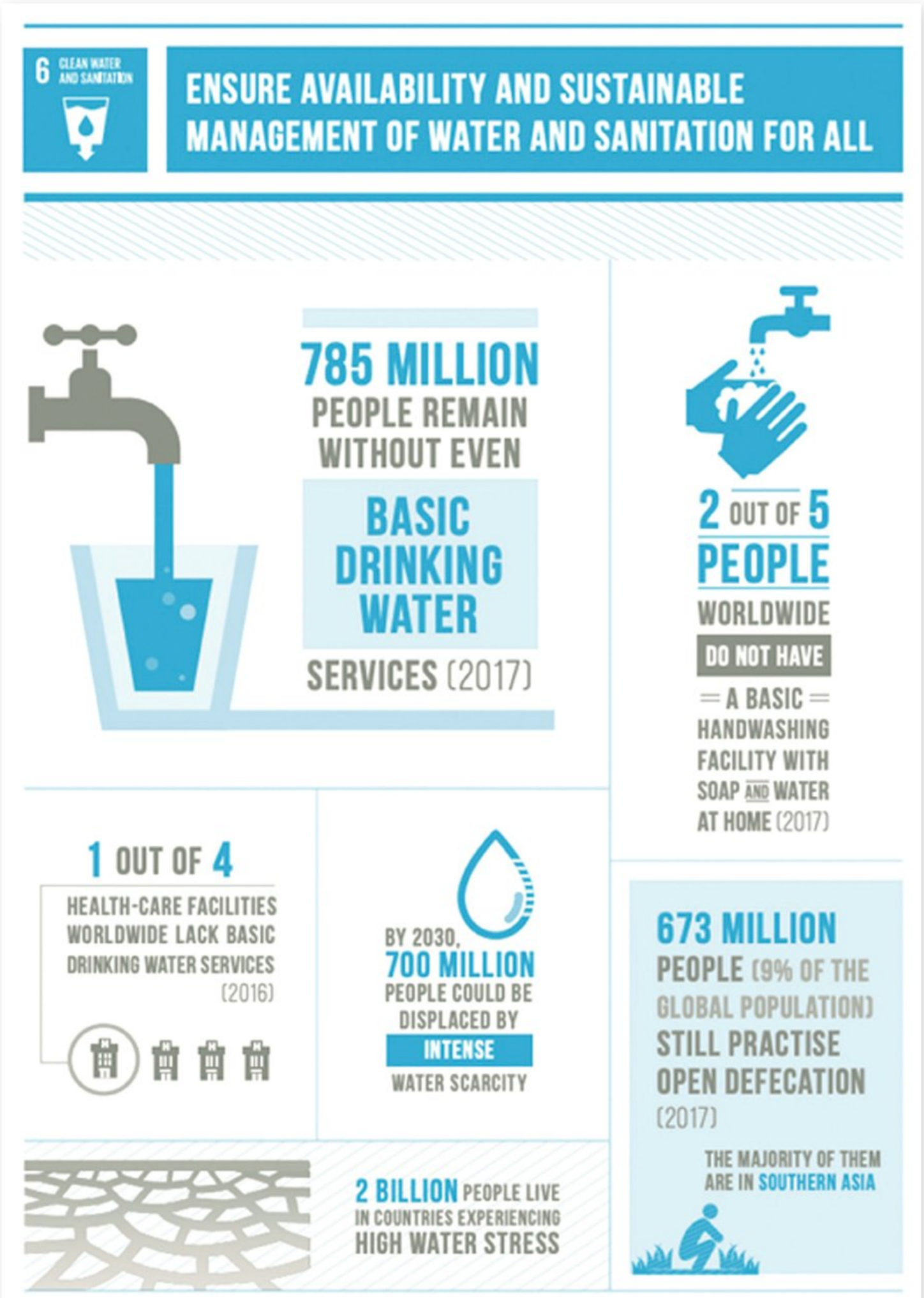


Figure 6.4b Safe and Affordable Drinking Water: By 2030 the UN's goal is to achieve universal and equitable access to safe and affordable drinking water for all

What products already exist to clean water?

EXISTING PRODUCTS

Let's look at some examples of award-winning filters.



Figure 6.5 JERRY is a compact water filter that can be attached to any jerry can to provide clean drinking water; it helps to remove chemicals, dirt, bacteria and parasites from water



Figure 6.6 Askwar Hilonga created a filter that uses sand and nanotechnology to remove contaminants



Figure 6.7 LifeStraw is a light-weight filter that can be worn around the neck and used like a straw; the LifeStraw company has been working with the Carter Center since 1994 to try to eradicate guinea-worm disease



■ **Figure 6.8** Aguadapt is a low-cost filter that is ideal for both disaster response and long-term use as it can last over four years; it can easily be added to most containers



■ **Figure 6.9** Majik Water captures water from the air and uses solar technology to convert it into drinking water. Once harvested, drinking water will be tapped from a storage tank located inside an automated water dispensing unit. It is a solution for low-income households in arid and semi-arid areas, as well as people predicted to have a shortage of drinking water because of climate change.

Many water filters exist but they are not always being used. This can be due to many reasons including cost, ease of use, ease of access, and even trust in the product. As a designer, we should take these potential issues into consideration when creating a water filter.

Let's see if we can think of ways to improve the existing filters that we looked at in Figures 6.5 to 6.9.

ACTIVITY: Analysing existing clean-water products

ATL

- Creative-thinking skills: Design improvements to existing machines, media and technologies

Pick one from the Jerry Can, LifeStraw or Aguadapt, then brainstorm and sketch out ideas. In what ways could it be made to be:

- **more affordable?**
- **easier to understand how to use it?**
- **more effective?**
- **more efficient?**
- **more ethical?**
- **more beautiful?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

ACTIVITY: What does your filter need to do to be successful?

ATL

- Critical-thinking skills: Propose and evaluate a variety of solutions

Imagine you needed to use a water filter every time you drank water. Which of these elements would be most important when choosing your water filter, and why:

- **weight (lightweight and small *or* sturdy and large)**
- **size (easy to carry *or* bigger to filter more water)**
- **use (shareable *or* for individual use)**
- **cost (cheap but needs to be replaced regularly *or* expensive but lasts longer)**
- **aesthetics (ugly but easy to clean *or* beautiful but harder to clean)**
- **ease of use (simple design but comes with instructions *or* instructions printed on the product)?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

THE USER EXPERIENCE

Sometimes when scientists and even designers make products, they think about the technical elements that make it work, such as the parts of a product that will filter the water. However, they sometimes forget to think about the user experience with a product, or how well the product is adapted for the local environment. If a product is not seen as convenient, easy or nice to use, sometimes we won't use it. Think about the differences between jackets – they all do pretty much the same thing, but a user is going to want their jacket to fit their body shape perfectly.

THINK–PAIR–SHARE

How would your life be different if you had to walk 10, 20 or 50 km to access clean water? How would you feel different physically?

Watch 'How far would you walk to find clean drinking water? | UNICEF' on YouTube:
www.youtube.com/watch?v=yRXmG1nBKiA&pbjreload=101

ACTIVITY: What is she thinking?

ATL

- Collaboration skills: Practise empathy



Figure 6.10 Girl carrying fresh water

This girl has access to clean water from a well, but she has to travel to collect it. She must then carry the heavy water back home.

Answering the following questions might help you get to know this person more:

1. **What can we perceive about this person's situation?**
2. **What might the person know about or believe?**
3. **What might the person care about?**

When you later **identify** the person/people you are designing for, these questions might help you to better understand them too.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

MORE EXISTING PRODUCTS

Let's look at some other examples of existing products that help people to drink clean water. Think about the user experience of these products.



■ **Figure 6.11** Drinkable Book – each page of this book can filter 100 litres of water, and the whole book can provide clean water for someone for up to four years; each page also contains information about the importance of clean water

Here are some other examples of existing products that help people to drink clean water. Find out more about these projects by searching online using these search terms:

The OasiSaw Water Pump System
OasiSaw water pump system

The Hope Tree
Hope Tree water project; desert; water solutions

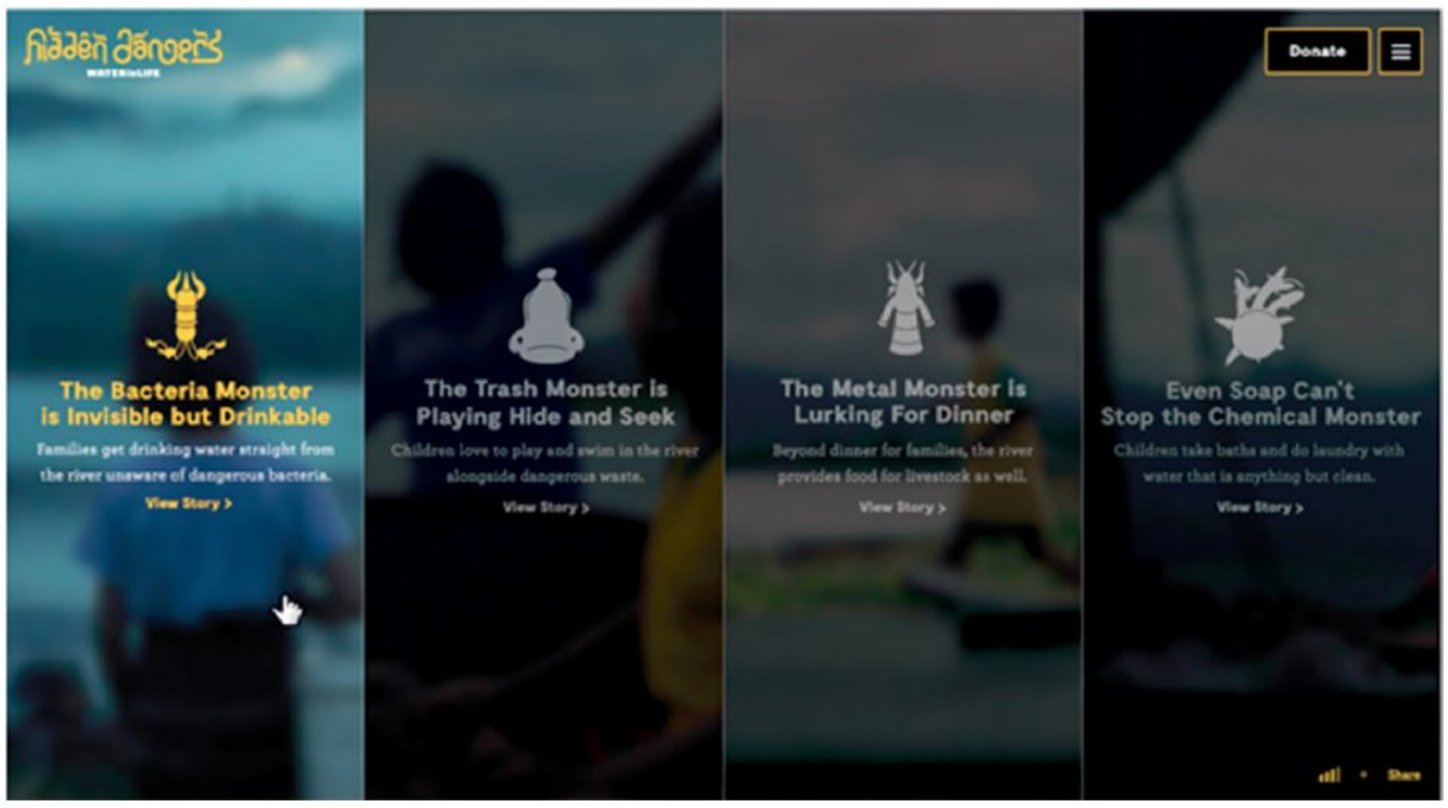


Figure 6.12 Hidden Dangers Project: this VR game has players sailing along in a boat and tackling monsters (personifying bacteria, trash and chemicals) that pop out of the water. Players only have a water filter as their weapon. It was taken to people living along the Khao Laem River in Thailand, who tackle these monsters in real-life. You can download the game anywhere in the world for free, though they suggest a small donation, which goes towards buying water purifiers for people with little access to clean water

Check out National Geographic's YouTube video 'This VR Game Shows Kids How to Fight Monsters in the Water':
www.youtube.com/watch?v=40-0azIS-4Q



Figure 6.13 The Hippo Roller is a simple device that can hold up to 90 litres of water; instead of carrying the water, it can be rolled, which also filters it

ACTIVITY: What are the pros and cons?

ATL

- Critical-thinking skills: Identify obstacles and challenges

Pick three existing products we have looked at in this chapter. Can you list the pros and cons of each product? You might want to think about size, weight, ease of use, cost and appearance.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Why do some people not have access to clean water?

ACTIVITY: Initial research

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

Lack of access to clean water is a global problem, but you will need to focus on a local issue for this design challenge. Although there are many people without access to clean water, there are many different reasons for this lack of access. You will need to research a specific area and find out exactly what their problems are and why they exist, and then design the best possible solution for that situation.

You can choose your own place to research or pick one of the following:

- **Omo Valley, Ethiopia**
- **Flint, Michigan, USA**
- **Jakarta, Indonesia**
- **Kisumu, Kenya**
- **Mexico City, Mexico**
- **São Paulo, Brazil**
- **Shijiazhuang, China**
- **Tamil Nadu, India**

Do some quick research, skimming through webpages to get a rough understanding of the water problems your chosen place faces. Are they caused by a recent natural disaster, old infrastructure, the geographic location, the climate, or something else?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Design situation

A water charity has commissioned you to design a water filter. The charity will put your design, along with other existing products, on their website and allow visitors to 'sponsor' the product so that it can be donated to those in need. You will choose the specific context for your design, including which country the water filter will be used in and how it will be used. Your product should be easy to use and should need no written instructions (simple graphic instructions are fine). The product should be durable and affordable.

EXTENSION

The UN has a tool linked to their Global Goal of Clean Water and Sanitation, which allows you to check the water of a specific country or region:
www.sdg6data.org/#Search_country

It gives general information about the place, such as the population and economy, but also provides a lot of information about water, including drinking water, sanitation, hygiene, waste water, water quality, efficiency, water stress, water management and more.

THINK–PAIR–SHARE

Which of the existing products we have already explored in this chapter would be most useful for your context and why?

If an individual in the context you have selected has access to clean water, what impact might this have on their community?

How can easy access to clean water change a community?

Once you have a rough idea of the water problem, you need to come up with a list of research questions. Instead of blindly skimming through webpages and pulling out facts, starting off with a set of research questions means that you will spend your time effectively and will find the answers to everything you have identified as important.

You might want to divide your questions into sub-questions, for example:

- **The water problem**
  - What is the route of this problem?
  - How have they tried to solve this issue?
  - Why is this issue not solved?
- **The people affected**
  - How many people live in this area?
  - How many people are affected?
  - Which people are affected (age, gender, and so on)?
  - What can you find out about their culture and traditions?
- **How people use water there**
  - Does the location rely on water for farming or other industry?
  - Does it have any role in cultural or religious events?
- **Location-specific information**
  - What is the climate of the area?
  - What is the geography of the area?

ACTIVITY: Unveiling stories

ATL

- Communication skills: Paraphrase accurately and concisely

You have learnt a lot about a specific water problem in a specific area. Imagine you are writing a newspaper article about it. What would the headline say? Your headline should show the main problem and should catch the attention of the reader. You could use something you have learnt in your language and literature classes here, such as alliteration or similes.

1. **What is the story?**
   What is happening in your context specifically?
2. **What is the human story?**
   How are the people impacted?
3. **What is the world story?**
   Does this water issue exist anywhere else in the world? What is the global impact of your issue?
4. **What is the new story?**
   What is currently happening?
5. **What is the untold story?**
   What do people not know about your issue?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

ACTIVITY: Research

ATL

- Information literacy skills: Use critical-literacy skills to analyse and interpret media communications

- **How might the publishing date impact the relevance of your research?**
- **Which organizations might publish information to exaggerate or minimize the water problem you are researching?**
- **How might an image or map search help your research?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i and ii).

ACTIVITY: What will you make?

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

Now that you have researched the problem, the people, the place and how they use water, you should have a rough idea of what you want to make. Maybe you will design a filtration straw, or maybe you will make a pull-along toy inspired by the Hippo Roller that filters water while children play with it.

Write a design brief summing up what you will make and why it will be best for your particular context. Remember that a design brief is similar to a pitch – it should say what you are planning to make and why. Why will this be better than existing products, and why will it be perfect for your context and client? Make sure you show your research in your design brief.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

Often it is easy for us to just use the internet or our classmates and friends for our research. Sometimes these are not the most reliable or useful people for the research challenge we face.

For this chapter, you will be designing a functioning water filter, so you will need to interview a scientist. This could be a science teacher, lab assistant, senior student in your school or a scientist you know from outside of school.

From the scientist you will want to find out the best way to filter water to make it clean. You may wish to reach out to that person face to face, or digitally through email. If several other classmates are also hoping to interview the same person, you may wish to come together to **create** your research questions. You should be learning about the best techniques and materials to use, and how to make sure you are working safely.

THINK–PAIR–SHARE

Who else might a designer have to collaborate with if they want to make and distribute their water filter?

Information literacy skills

Here are some tips for asking good interview questions:

1. Prepare your questions before the interview.
2. Before you start, explain the purpose of the interview.
3. Share what you know already, including the context you will be designing for.
4. Keep your questions short, focusing each on one point only.
5. Ask open questions, encouraging the interviewee to give long answers rather than one-word answers.
6. Do not assume answers.
7. Do not judge the responses.
8. Avoid irrelevant discussions.
9. At the end of the interview, **summarize** the main points.
10. Thank the interviewee.
11. Follow up at the end of the project by showing them your final design (you may wish to get feedback from them when you evaluate your product too).

You might also want to ask them about testing the water that goes through your filter, and you could ask them to help you **evaluate** your final product.

You might also wish to bring in knowledge you already have from your science classes to help you here.

This TED ED video might give you other ideas for testing your water filter: **https://ed.ted.com/lessons/when-is-water-safe-to-drink-mia-nacamulli**

ACTIVITY: Water filter specifications

ATL

- Organization skills: Set goals that are challenging and realistic

When writing your success criteria for this project, you should write specifications for the following categories: aesthetics, cost, customer, environment, size, safety, function and material.

When writing these specifications, you should show information from your research about your context. The prompts in Table 6.1 might help you to write your specifications:

Hint

When designing your specifications for this project, you should also think about the testing methods for each specification and how you might bring in your own scientific knowledge to test the effectiveness of your water filter.

You might choose to write your specifications in a table, with columns for your reason (related to your context-based research) and your testing method.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

Specification type	Prompts related to your context
Aesthetics	Is there anything you know about the user's culture or traditions that might impact the aesthetics of your water filter? Do you think the product should stand out or blend in? Will there be anything printed on the filter?
Cost	How might the number of times your product can be used, or the number of people who can use it, impact the cost? How can you keep the cost low without the quality suffering?
Customer	What do you know about the customer that could help you with your design? How do they use the water, and what for? What other daily activities do they do that could be incorporated into your design? How will the customer know how to use the product? Are you making your filter for a specific type of person, for example a child?
Environment	What type of water source will your filter work with? What are the current risks of that water source? Will your customer have to travel a long way to get to the water source? Is there anything else you know about the environment that might impact your design? Is it hot? Is it cold? Is it dusty? Do they have to walk through dangerous places to get to the water?
Size	Does the customer have to carry the water filter a long way? Does the water filter carry water too, or is it used to drink from a water source? How often can they collect water? Is the water being collected used by one person or many people? How might the size impact the safety of the device?
Safety	How will you share safety information with the user? What language do they speak? Can they read? How will the user know the water is safe to drink?
Function	The main function of your product will be to provide clean water to the user. What is the problem – for example, a common disease in your chosen context – that your product will solve? Will your product have any additional functions?
Material	How will the material you use be reliable in your context (for example, if your context is somewhere very hot)? Will the user have easy access to replacement parts?

Table 6.1 Prompts for your water filter specifications

ACTIVITY: Get sketching

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Once you have completed your research, you should start sketching. Your initial sketches will be rough – you should go for quantity rather than quality. The act of sketching out your initial ideas might even lead to more ideas. You might need to draw some of your key ideas from multiple angles, including showing exactly how the filter works. You can do this by drawing the inside of your filter and adding labels. When you have chosen the design you want to make, you will need to draw an exploded view.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

ACTIVITY: Exploded view

ATL

- Communication skills: Interpret and use effectively modes of non-verbal communication

An exploded view is a diagram showing all the parts of an object, as well as how they relate to each other. Instead of drawing the individual elements side by side, you draw them as if they have just been separated, as this helps the viewer see how things fit together.

Your exploded view should be drawn to scale and all the parts should be labelled. You might even wish to add the purpose of each component to the label.

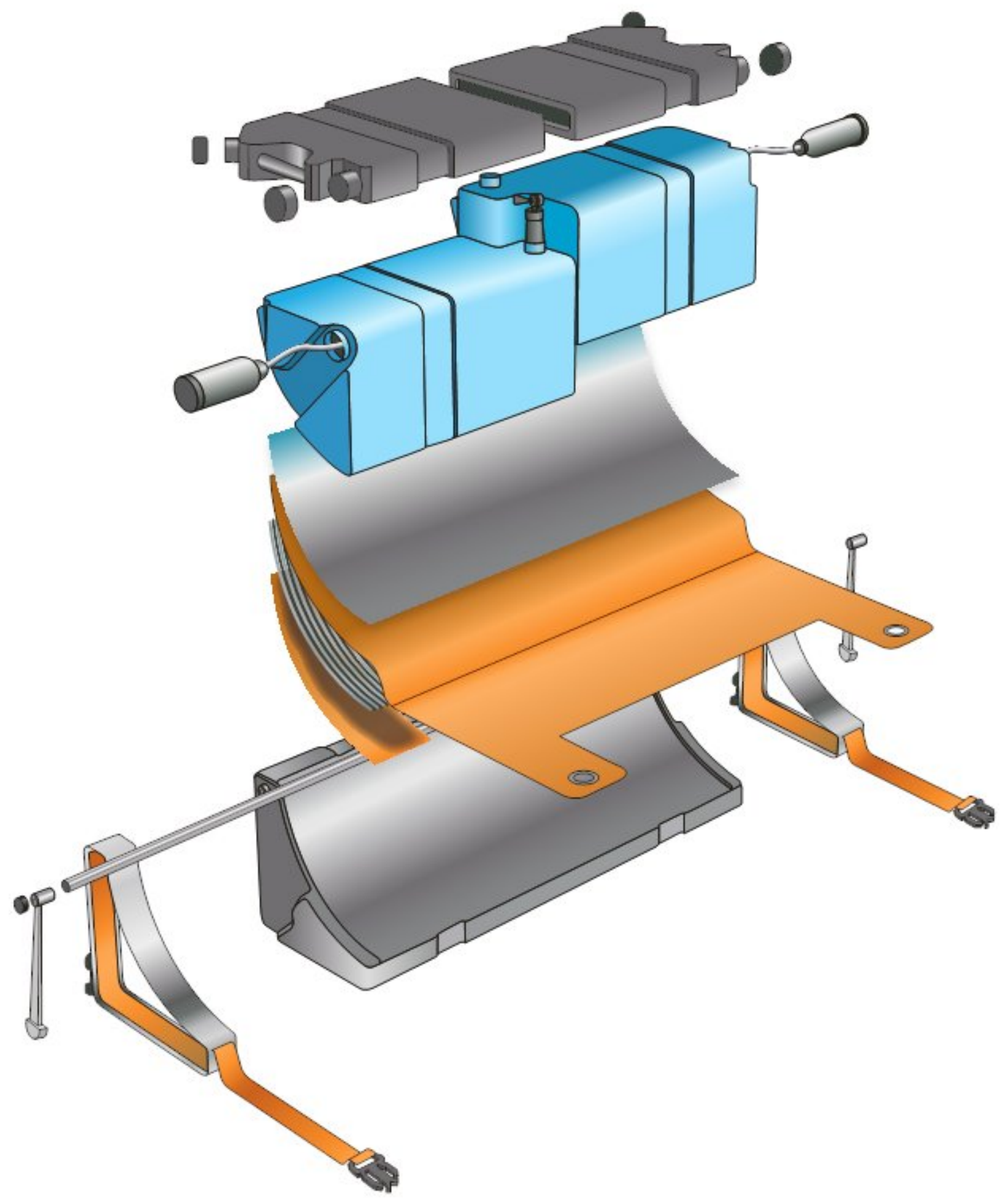


Figure 6.14 This is an exploded view of the Parabosol, a solar-powered water filter system that not only filters water but also heats it up, making it safe to drink

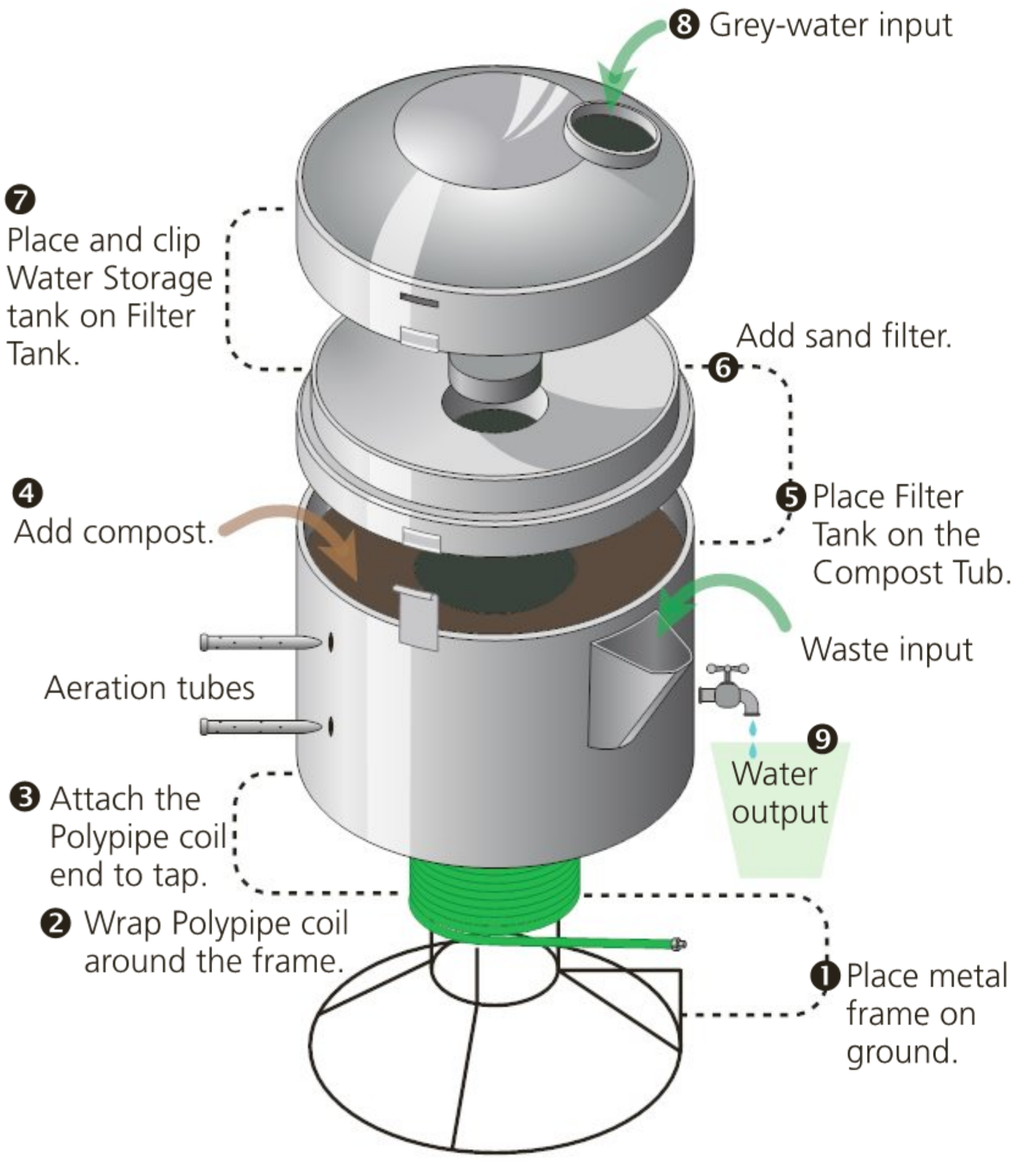


Figure 6.15 The Earth Tub also uses heat to make water safe, but this system also provides hot water to the user for cooking, cleaning and washing

Find out more about exploded view drawings here:

https://technologystudent.com/despro2/expld1.htm

www.bbc.co.uk/bitesize/guides/zrx7xfr/revision/6

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iv).

ACTIVITY: Creating a logical plan

ATL

- Organization skills: Set goals that are challenging and realistic

Now you are ready to design, but first you need to create a logical plan. This plan should be detailed enough that other people can follow it. The plan should include the materials, tools and time required.

Imagine that your product is going to be mass produced and then put together by the end user. How can you make clear plans that anyone can follow? What if the person does not speak the same language as you, or what if they cannot read? The product might be put together by a professional, but the step-by-step instructions will help the user to fix or replace parts of the filter.

Many companies, such as Lego and IKEA, create illustrated step-by-step plans. They usually have a picture showing all of the parts on one page, followed by step-by-step illustrations for each stage. They sometimes include what not to do as well.

This is the perfect opportunity to see if you can design a simple plan using only images.

Communication skills

You should test your visual plan. Once you have created, found or bought the individual elements for your water filter, you could test your logical plan by seeing if someone else can put your product together using the instructions alone.

If they make a mistake, ask for feedback and improve your instructions.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

ACTIVITY: Does it work?

ATL

- Critical-thinking skills: Troubleshoot systems and applications

When you have finished making your water filter, you will need to do a performance test. If you live locally to the problem you are solving, gather water from the problematic water source and filter it.

If you are nowhere near the water source or near your actual end user, you might need to find a comparable water source or simulate it. If you were making a product that someone would need to carry a long distance, for example, can you get a friend to carry it the same distance and give you feedback on how easy it was to carry?

How else might you test that your finished product is suitable for your client?

Remember to look at your specifications and **evaluate** each one. You might need to use an expert, like the scientist you interviewed, to get feedback on your product.

Remember, working through the design cycle means that we make something, evaluate it, improve it and make it again, and perhaps repeat this cycle many times. If your product is not as successful as you hoped, treat it as a prototype. How would you improve the product if you made it again?

THE BIG TEST

Would you drink water that has been filtered through your product? If not, then you should keep improving it until you can.

◆ Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i, ii and iii).

When you make your final product, it is important to document the process through photographs and by taking notes. As your product will be filtering water that people will actually drink, how will you make sure you make it in a clean, safe environment?

! Take action

- Think about fundraising for a water-related charity. Try to raise money by doing something related to water and not just a bake sale. Perhaps you could have a competition where you get people to build water filters quickly during their lunch break, or a challenge where people can pay to see you drink 'dirty' water with the LifeStraw (be sure to read the instructions properly for this, or ask for help to make sure you complete the challenge safely). You could do a sponsored walk in which people walk the same distance that your client has to walk to get clean water.

ACTIVITY: Product impact

ATL

- Critical-thinking skills: Revise understanding based on new information and evidence

What might the big impact be on your user? Make sure you use the information you gathered from your testing to **justify** your answer.

1. **How might it improve their health? (This could include mental as well as physical health.)**
2. **What diseases will they have less risk of getting?**
3. **Will the product free up more time for them? What could they do with this time?**
4. **How will your product impact the whole community?**
5. **If this product was mass produced, how many people could it benefit potentially?**
6. **How might access to clean water benefit a community more than access to other resources, such as medicine, food or education?**

◆ Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (iv).

Did you include washing hands and parts in your logical plan? Is there anything you have learnt from your Sciences class that can help you make your product in a safe, sanitary environment?

Reflection

In this chapter we have found out how many people do not have access to clean water. We explored different ways that designers can improve access to clean water. We took action by designing our own clean water solutions.

Use this table to evaluate and reflect on your own learning in this chapter.					
Questions we asked	**Answers we found**	**Any further questions now?**			
Factual: Who doesn't have access to clean water? What problems can drinking dirty water cause? What products already exist to clean water?					
Conceptual: Why do some people not have access to clean water? How can easy access to clean water change a community?					
Debatable: Will access to clean water benefit communities more than access to any other resources?					
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Organization skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					
Transfer skills					
Learner profile attribute	Reflect on the importance of being knowledgeable for your learning in this chapter.				
Knowledgeable					

7 How can tifos motivate sports teams?

Teams become **communities** when they **collaborate**.

CONSIDER THESE QUESTIONS:

Factual: What are tifos? How are tifos made? How important is brand identity for a team and for the fans?

Conceptual: Why do people become fanatics? What is a community? How are fan groups a community?

Debatable: Do tifos have an impact on the game?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

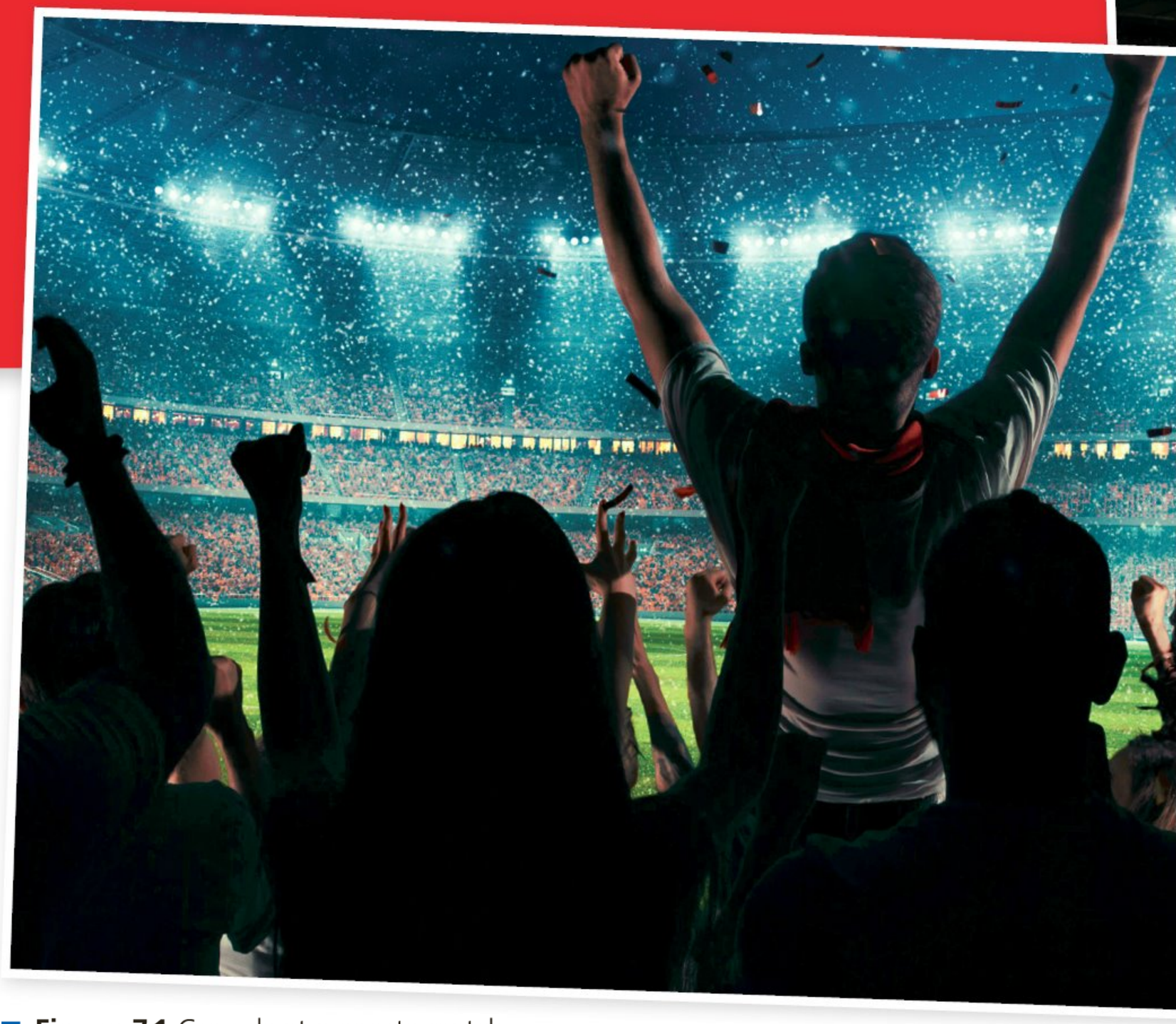


Figure 7.1 Crowds at a sports match

IN THIS CHAPTER WE WILL …

- **Find out** what a tifo is and who makes them.
- **Explore** the design process that goes into making a tifo.
- **Take action** by creating your own tifo.

We will reflect on this learner profile attribute …

- Risk-takers – we will think about how we can work collaboratively to create an innovative product that brings us together as a team.





These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

ACTIVITY: Who is the 12th player?

ATL

- Collaboration skills: Practise empathy

Football teams usually have 11 players on the field (unless players have been sent off with a red card). The 12th player refers to the fans.

Imagine you are a player walking on to the pitch in front of those fans.

- **What would you see?**
- **What would you hear?**
- **How would you feel?**
- **What would your experience be if you were the player going out on to a pitch with no fans?**
- **How would your game be different if you had to play in an empty stadium instead of a large, loud stadium filled with chanting and waving flags and banners?**
- **Do you think this might have an impact on the result?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

In this chapter, we will learn how football team fanatics use design to support and cheer on their clubs. We will focus on **tifos**, which are mostly banners and mosaics created by football supporters' groups. You will learn about this culture and consider the impact that tifos have on the game. You will then design your own tifo for a school or local team of your choice.

What are tifos?



Figure 7.2 Fans holding up coloured paper to form a mosaic

Tifo comes from the Italian word *tifosi*, which means 'fans'. It refers to the banners, mosaics, chants and even choreography that fans create to support their teams. Most football clubs have supporters' groups – members-only groups of team fanatics, sometimes called **ultras** – that get together to design tifos and organize fan events.

Tifos are often fabric banners that are unveiled for only a short time during a particular game. For mosaics, or card stunts, every seat has a different colour material placed on it, which everyone holds up at certain points during the game to show an image, such as a flag. Some groups even use pyrotechnics and coloured smoke grenades, though these are banned at many stadiums.

They are usually made for one game only; some teams even burn them afterwards, so that rival teams cannot get hold of them. Even though they will potentially only be seen by some other fans and the players for a brief moment, they can cost thousands of pounds and take many hours to make.

They often show things that are important to the team identity, such as crests and colours, but may also make reference to politics, pop culture and local culture. They are often made for special events, such as cup games, local derbies and anniversaries. Tifos have been popular since the 1960s, but more and more supporters' groups are now bringing tifos into their culture.

> *'What could possibly motivate supporters to come together days, even weeks before a big game, to spend hours designing, constructing and rehearsing the display of banners, mosaics and pyrotechnics, that will only be seen by their fellow fans and 22 players on the pitch for one tiny blip in time? Some might think this is madness, but in that one priceless moment of unified devotion, as the stars align and the fans demonstrate their unfailing positivity just to give their team that fleeting edge, suddenly it starts to make sense.' – COPA90 Football's YouTube video 'Everything You Need To Know About TIFOs'*

FANATIC SUPPORTERS' CLUBS

Anyone can be a fan of a football team, but most teams also have supporters' groups. You usually have to pay a small fee to be a member of these groups. You can then access their merchandise, organized transport to away games, special events and even get involved with tifo making. They also have a place where you can donate money to go towards the cost of making tifos in their online shops.

Many football clubs have multiple supporters' groups. For example, Charlton Athletic, a football team in London, has many supporters' groups. Some are divided by geographic location, such as the East Kent Addicks, and the Swedish Addicks for fans in Sweden. They also have the Proud Valiants, their official LGBTQI supporters' group, and the Charlton Athletic Disabled Supporters Association (CADSA).



Figure 7.3 Fans unveil a giant tifo



Figure 7.4 Here you can see Atlanta United's four main supporters' groups: Footie Mob, Resurgence, Terminus Legion and The Faction

THINK–PAIR–SHARE

What is a community?

Is a fan group a community?

What communities do you belong to?

Team up with another student and find any communities you feel you both belong to.

ACTIVITY: Who else supports your team?

ATL

- Information literacy skills: Access information to be informed and inform others

Research your favourite football team or a local team and see if you can find out about their supporters' groups. If you are unsure of your local team, or cannot find much information, try looking at the websites for football teams such as Atlanta United, FC Cincinnati, Paris Saint-Germain, Portland Timbers, SC East Bengal or Borussia Dortmund.

- **How many supporters' groups do they have?**
- **What makes the various supporters' groups different?**
- **What benefits are there from being a member?**
- **What do the supporters' groups do? (Lobby? Socialize? Create?)**
- **Do they have anything on their members site about tifos?**
- **Do they have special merchandise?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii).

How important is brand identity for a team and for the fans?

PEPE PERRETTA

Although most tifos are a group effort, one individual stands out in the world of tifos. Pepe Perretta is an Argentinian airbrush artist known for making some of the most beautiful and detailed tifos in the world. He has been commissioned by many supporters' groups to make large airbrushed banners.

Pepe first began airbrushing by painting his motorbike and helmet. He soon combined his artistic skills with his love of football to produce tifos for the teams he supported. Now he gets paid to make them, and they get flown and shown all over the world.

Pepe's tifos can take anywhere from 5 to 15 days to make. He says: 'It's a very big responsibility for me to try to embody all the fans' feelings into fabric.'



Figure 7.5 Pepe Perretta's work

EXTENSION

See more on Perretta's work in the YouTube video 'The Truth Behind the World's Greatest Tifos': www.youtube.com/watch?v=w5qTnfkyb4Y

ACTIVITY: Existing tifos

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

COPA90's website – www.copa90.com – has lots of great information about tifos. They also have many videos on their YouTube channel, including a yearly 'Unbelievable Fan Moments of 20XX' showing tifos from around the world.

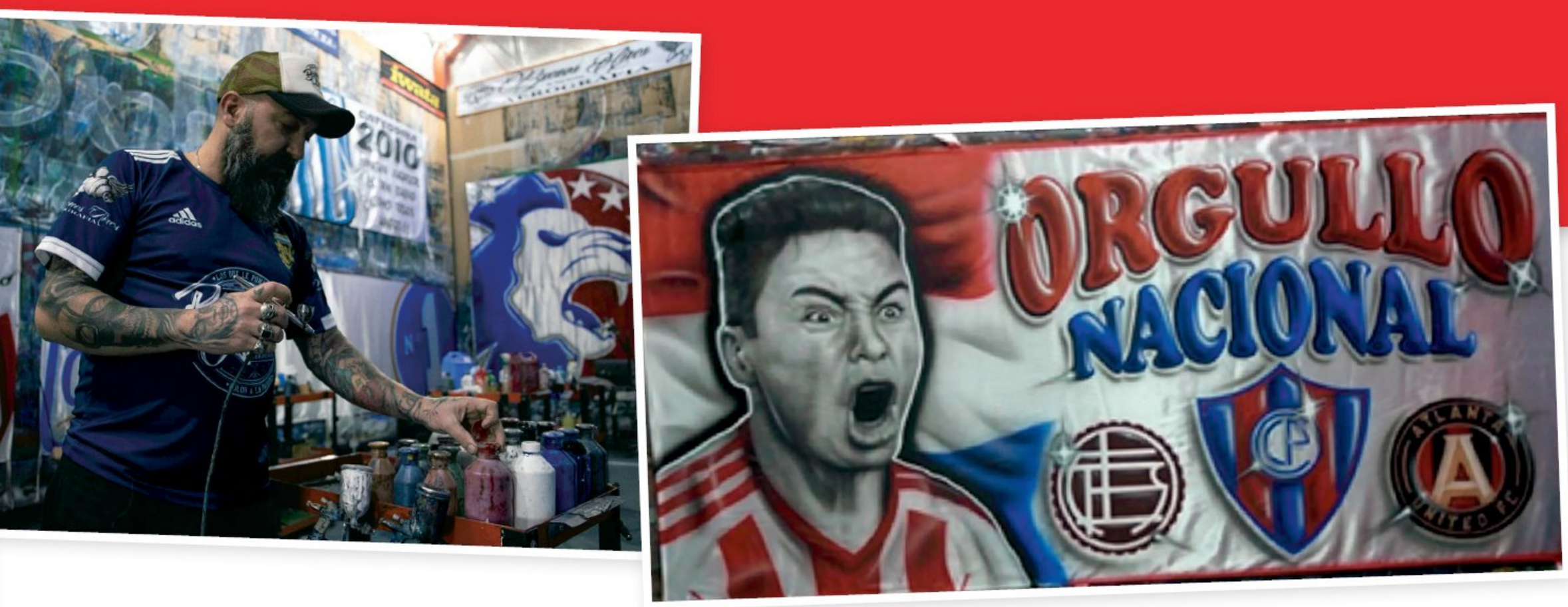
Look at their website and YouTube channel, and choose two tifos to **analyse**:

- **What football team was the tifo made for?**
- **What is the name of the supporters' group that made it?**
- **What type of tifo was it (mosaic, banner, and so on)?**
- **What did it depict?**
- **What size was it?**
- **How did the tifo work?**
- **How do you think it was made?**
- **What impact do you think it would have had on the fans, the fans of the opposite team, and the players from both teams on the pitch?**

Now, do the same again but find two examples of tifos from a supporters' group social media account. You can also search using hashtags.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).





■ **Figure 7.6** With banner and mosaic tifos, the people who display them don't get to experience them during the game and often only see low-quality photos afterwards!



■ **Figure 7.7** Tifo by Atlanta United's Footie Mob being laid out and checked before the game by a select few

How are tifos made?

DISCUSS

When is it OK to use social media as a research source? What are the benefits and potential problems with using social media?

SECRET TIFOS

Most supporters' groups keep their tifos secret until they are unveiled live at a match. Also, many groups will not share how their tifos are made and the designers and makers usually remain anonymous.

In the *Guardian* article 'A day with Portland's tifo creators: "We do it for the players"', Mike Coleman, a member of the Portland Timbers Army, says, 'We always say, the first rule of tifo is: don't talk about tifo.'

Coleman goes on to talk about the excitement that tifos create at a stadium, but also highlights that the people who make them and hoist them above their heads often don't get to see them during the game.

THINK–PAIR–SHARE

- **Why do you think supporters' groups keep their tifos a secret before the game?**
- **Why do you think tifo makers are reluctant to share how they make their tifos?**
- **Why do you think tifo makers put so much effort into a tifo, even though they won't get to see it during the match?**

Information and media literacy skills

Although websites are normally seen as a more reliable source of information than social media accounts – because someone has usually spent time editing the work before publishing – social media can still be a great source for photographs.

You can look for tifos on social media platforms such as Facebook, Twitter and Instagram, or search using hashtags to help you find more images, as photographs are often taken by members of the public in the stadium. The photographs may be lower quality, as they are usually taken with people's phones, but low-quality is fine when you are just looking for images to analyse.

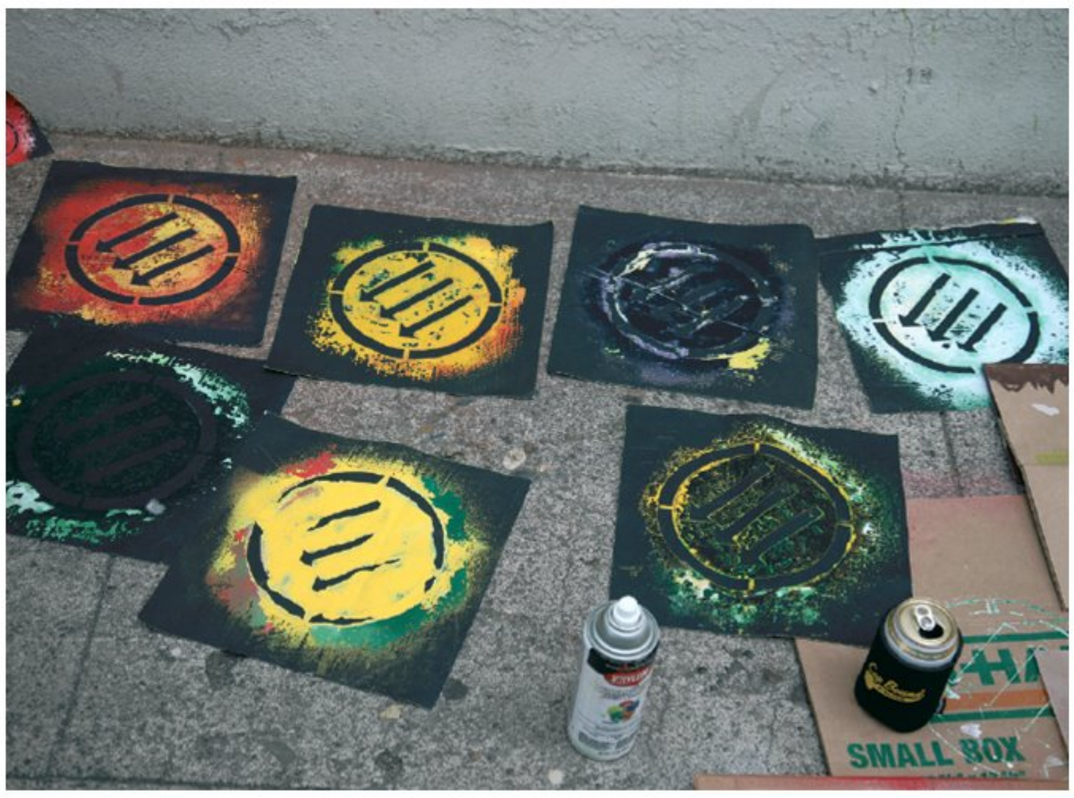
> *'People see the ropes hanging or they see the cards out on the seats and they get excited, like 'Oh, what's it gonna be?' … But the thing is, most of us don't get to see it until we go home. We don't do this for ESPN, we don't do it for Fox, we don't do it for the* Guardian. *We do it for the players.'*

The Timbers Army website has a whole page about tifo etiquette as well as more practical information, such as: 'Hold your card up high. Please do not wave or shake them.'

MAKING A TIFO

Although a lot of tifo culture is secret, some information is available. What is shared is that there are many ways to create tifos. Some teams use projectors to project their design on to fabric, then chalk, pencil or charcoal the outline before painting it in. Other teams draw out a grid on a large piece of fabric, and map out their design before painting it in. Techniques used can range from airbrushing to household paint and brushes!

The Timbers Army website – **https://timbersarmy.org** – has a section called 'How to make your own two-sticks'. Two-sticks are small banners of fabric stretched between two plastic pipes, usually held by one or two people.



■ **Figure 7.8** You could use a stencil to create part of a big banner or to create a small banner or flag

DISCUSS

Fans must all raise their paper at the same time. Sometimes they have two colours, and sometimes there is a choreography, so they need to raise the right colour at the right time to create different patterns and pictures.

How do you think these are organized?

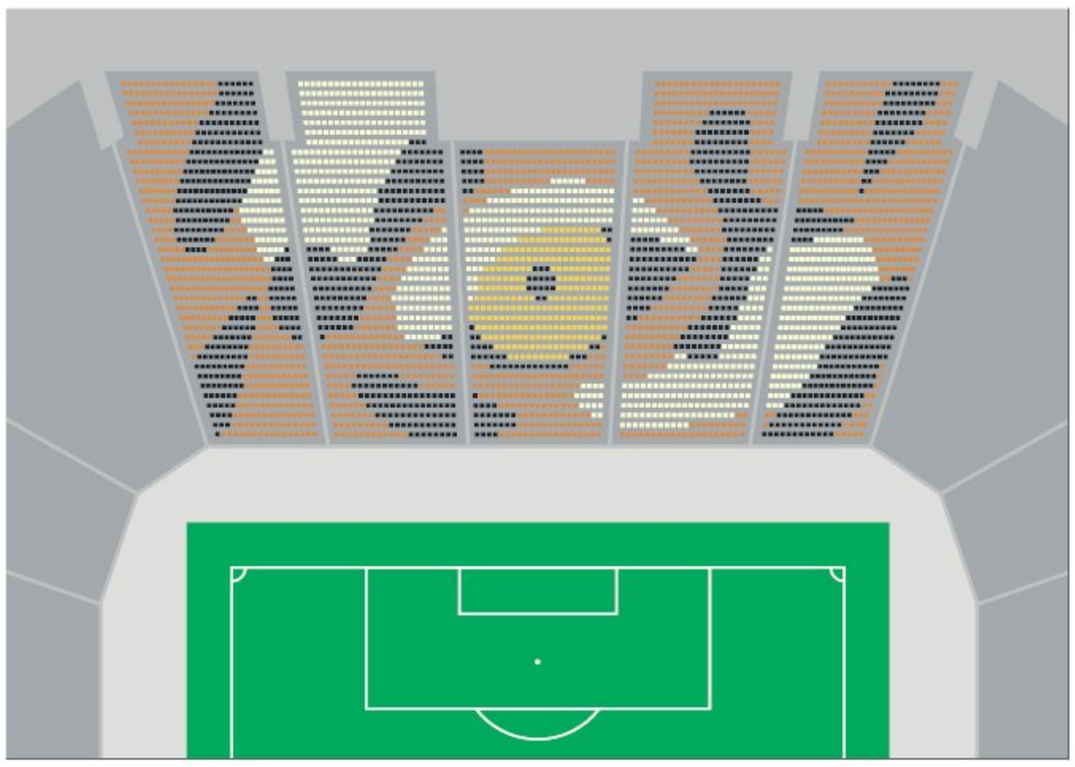


■ **Figure 7.9** An example of a mosaic (or card stunt) tifo made by fans holding up pieces of coloured card or foil

Think Sustainability

The following advice comes from the tifo makers of the Timbers Army and Rose City Riveters:

> *'We try to be sustainable by reusing the fabric two or three times. As you add more layers, it becomes too heavy to lift. We've made backpacks out of old tifos and people even cut off pieces to keep as mementos. We also use the old tifos as ground cover, so we don't get paint on the floor of the warehouse we make our tifos in. Sometimes we have scraps of fabric which we donate to a local reuse shop too.'*



■ **Figure 7.10** Mosaic tifos are made by placing a coloured piece of paper or foil on every seat; most football team or stadium websites provide a seating chart, so you can see how many rows and columns of chairs and aisles there are



■ **Figure 7.11** From digital sketch to final tifo – this 'crushed this league' tifo was made by FC Cincinnati supporters' team The Pride

Interview: FC Cincinnati – The Pride

Stephen Starkey is a member of FC Cincinnati supporters' team The Pride; he is also on the executive board and is in charge of the creative department. He describes the process of creating a tifo, which clearly involves a lot of collaboration, in these steps:

1 **Initial ideas:** the ideas could be related to the club, the city or could be something very topical or linked to pop culture; for example, they created a tifo inspired by a famous Cincinnati artist, Charley Harper. The Pride share ideas online on a group chat. They bounce ideas back and forth until they come up with a final idea.

> 'The first idea is never the final idea – collaboration is where things happen.'

2 **The design:** the design is then created in Adobe Illustrator. They choose this method as they are able to isolate different parts of the design, or show different layers, which helps them to make adjustments and will help them with tracing. They can also use this technique to work out how much paint in each colour they will need, and it even helps them to calculate the price.

3 **Sewing:** by looking at the design, they can work out the dimensions – will the design be 10 ft by 10 ft, 30 ft by 40 ft, or even 90 ft by 40 ft. The fabric they use usually comes in 10 ft by 30 ft pieces, so a team of people will have to sew the pieces together. As tifos are expensive, sometimes they reuse the fabric and paint over existing tifos.

4 **Tracing:** The Pride has access to a large hall where they can hang the fabric, project the design and trace. They then use a 'paint by numbers' system, where they can label which section needs to be painted which colour.

5 **Painting:** an email is then sent out to the supporters' group and everyone is invited to come in and paint, often at a 'tifo night'! As there is a paint by numbers system, the supporters will be given a colour and can easily find their sections to paint. Supporters' groups have many social nights outside of this, which include board game nights, and help to create a sense of community among the fans.

How many people get involved? The tifos could be anything from a small two-pole to a huge banner. FC Cincinnati also has lots of room around the stadium for additional banners to hang. When describing how many people help make the larger banners, Stephen Starkey says:

- around 10 to 15 people are involved in the initial design process
- three or more people are involved with sewing the fabric
- five to ten people are involved with tracing
- for painting, a group email is sent out, so they will take as many people as they can fit! Whole families, including children, come to the painting events.

EXTENSION

Check out the video 'MAKING THE TIFO (FC Cincinnati)'. It explains the design process and how they create tifos using a projector. It also shows the fan view from underneath a giant tifo banner: www.youtube.com/watch?v=gx6gcTYD4X0

BASEBALL CHEERING IN SOUTH KOREA

Although this chapter focuses mainly on the fan culture around football, other sports have their own unique fan cultures too. In South Korea, baseball cheering is an important part of fans' culture. Different clubs have different ways of cheering but there are usually songs for the team and songs for the individual players, known as fight songs. The songs, which are easy to learn, are often accompanied by traditional Korean instruments. Teams sometimes sing K-pop songs and often have easy-to-learn dances to do while singing. Some clubs have cheer instructions or cheerleaders, who encourage the fans to sing.

Although most of the culture is focused on singing, they also have some visuals. Clubs use inflatable sticks and even plastic bags in their team colours. The Hanwha Eagles have robots, called Fanbots, which can be used by those who can't attend a game live. From the comfort of their own home, they can get their Fanbot to display their face or a message to the players. In the Lotte Giants stadium, plastic bags were put out to collect trash in, but fans ended up tying them to their heads to show more team colours in the crowd.

Watch 'Eagles Forever, Fanbot 팬봇' to see the Hanwha Eagles' Fanbots:
www.youtube.com/watch?v=BBiRLYu8Wjo



Figure 7.12 Inflatable sticks can be used to add team colour to a crowd, but also to bang together to make noise



Figure 7.13 Spectators at Lotte Giants baseball games in South Korea tie plastic bags to their heads to add more orange to the crowd

Design situation

Your school has many teams and clubs, including sports clubs and possibly others such as robotics or mathletics. The teams need more support to improve the experience of competitions for both the players and spectators, but also to potentially improve their results.

Your challenge is to pick a team and custom design and make a tifo for them. It can be a smaller two-stick tifo, a larger tifo, or even a choreographed mosaic. If you choose to make a banner, you might want to make one that can be used over and over again. You might wish to work in a team for this project.



Figure 7.14 A tifo that Charlton Athletic brings out regularly at important matches; provided by Charlton Athletic Museum



Figure 7.15 A tifo made after the death of police officer Keith Palmer, a long-time Charlton fan; in 2017, an unarmed Palmer stopped a knife-wielding terrorist from entering the Palace of Westminster in London; Palmer had a season ticket so, as a memorial, Charlton replaced his white chair with one with his officer ID printed on it; provided by Charlton Athletic Museum

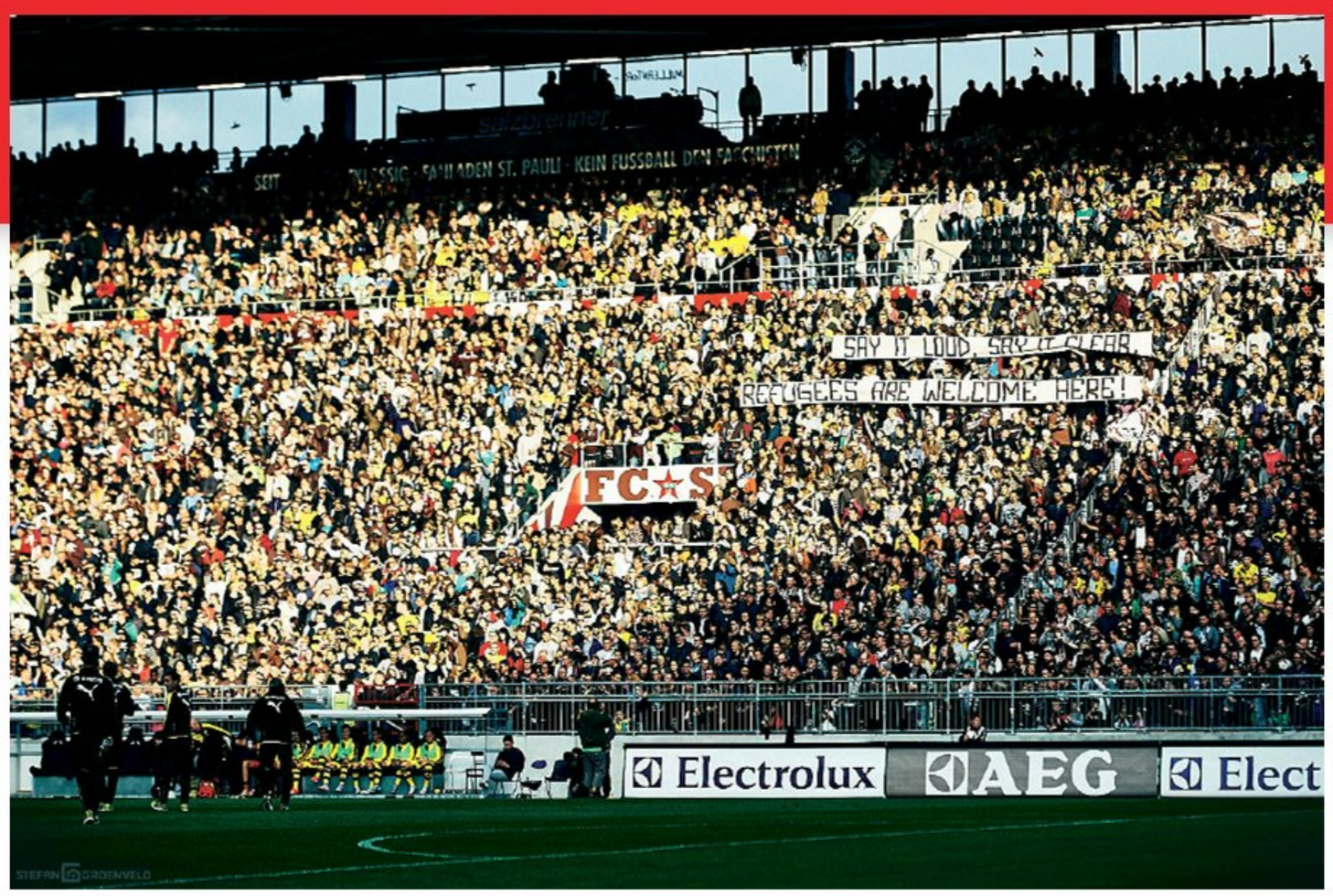


Figure 7.16 This banner was shown at a game between FC St. Pauli and Borussia Dortmund

WHAT DO YOU KNOW ABOUT THE TEAM ALREADY?

When you have selected the team that you want to make a tifo for, you need to write down everything you know about them. You might want to find out if they have any big games coming up, who their rivals are, who the team players are, and more. You can also research team colours and mascots (you might have the same colours and mascots for all teams in your school). Does the team have any in-jokes or any special moments in their history?

Tifos are not always about the team, however. Sometimes they refer to local culture, pop culture or politics. Is there anything else you know about your school or local area that could be included in your design?



Figure 7.17 Sometimes banners are made to celebrate specific players; provided by FC Cincinnati's The Pride





Figure 7.18 This banner was made for when the US women's team played in Cincinnati, shortly before the 2019 Women's World Cup; one of their players, Rose Lavelle, is from Cincinnati, so they made this banner for her; afterwards they cut out the rose and framed it for her

IDEATION

In this chapter you are going to be given many techniques for **ideation**. Ideation is when you come up with ideas. You can use as many of these different techniques as you want. A good designer doesn't just stick to one method of ideation, like brainstorming, but knows that many different methods will help bring different types of ideas.



■ **Figure 7.19** In this design made by the Rose City Riveters, supporters of Portland Thorns FC, ropes are used to suspend the tifo. These would have been placed before the match and with support from the stadium.

PERCEIVE–KNOW ABOUT–CARE ABOUT

Draw a sketch or take a photograph of one of your team's fans. It might be a player's parent or it could be a student, teacher or coach. Use the following questions to better understand the fan:

- **What can the person perceive?**
- **What might the person know about or believe?**
- **What might the person care about?**

CIRCLE OF VIEWPOINTS

Brainstorm a list of different perspectives then use this script skeleton to explore each one:

1 **I am thinking of tifos from the point of view of …**
Pick one from: player, student-fan, teacher-fan or parent-fan.

2 **I think …**
Describe the topic from your viewpoint.
Be an actor – take on the character of your viewpoint. Write/talk in the first person.

3 **A question I have from this viewpoint is …**
Ask a question from this viewpoint.

WRAP UP

What new ideas do you have about the topic that you didn't have before? What new questions do you have?

OPTIONS EXPLOSION

1. **List the obvious options for your tifo.** There would not be a decision unless there were at least two or three obvious options.
2. **Now brainstorm all sorts of different options to find the 'hidden' options.** Often there are hidden options that are the real best choices. Be imaginative! Add on to ideas that you already have, combine ideas to get new ones, look for ideas of a very different kind, imagine you are in different roles and suggest ideas from the perspective of those roles, and so on.
3. **Ask 'What have we learnt about the situation from finding these options?'** This is a way of understanding the situation better. You may want to go on to a routine for comparing and choosing between options.

ACTIVITY: Colour–symbol–image

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Think about the team you are designing for – even better, go to a practice or a game. As you are thinking or watching, choose a colour, a symbol, and an image that you feel best represents or captures the essence of the team.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

ACTIVITY: Design brief

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

Now that you have your initial ideas, you should be able to write a design brief outlining your main idea. Your design brief should include the following:

- **the type of tifo you are making**
- **how big it will be**
- **what it will be made from**
- **how it will work (what the fans will do)**
- **what will be on the tifo**
- **the materials and tools you will need to use**
- **the colours you will use**
- **whether you have the resources available to make the tifo, or whether you need to fundraise.**

Make sure to show your initial research here.

As tifos are often secret until match day, you might want to get feedback on your design brief from only a few people. You might choose the team captain, players or a classmate.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

IDEO BRAINSTORMING RULES

IDEO, a global design agency, has a set of brainstorming rules that it uses to help with ideation. They are especially good if you are working in a team:

- **Defer judgment** – don't worry whether an idea is good, or whether it is practical.
- **Encourage wild ideas** – use your imagination, dream big.
- **Build on the ideas of others** – you don't have to invent something new, be inspired by others, be inspired by ideas people are jotting down.
- **Stay focused on the topic** – stay focused while brainstorming.
- **One conversation at a time** – when you discuss and share ideas, listen and explore one idea at a time.
- **Be visual** – add sketches and visual notes if you need to.
- **Go for quantity** – come up with as many ideas as you can before you worry about the quality. Try to come up with 100 ideas!

IDEO's website – **www.ideou.com/pages/brainstorming-resources** – has many other brainstorming techniques and ideation methods, including:

- **Silent brainstorming** – gather a group and share a prompt; instead of a discussion, everyone should write their ideas on sticky notes.
- **Idea wall** – put a prompt up in a public place along with sticky notes and pens, and collect ideas several days later.
- **Rapid ideation** – limit yourself to 10 or 15 minutes and focus on coming up with as many ideas as possible.
- **Sketching** – instead of words, use drawings and images to share ideas and activate a different part of your brain.
- **Prototyping** – try making a quick mock-up of an idea to see what you can learn.

ACTIVITY: Start sketching out your design

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

When sketching, you should also be thinking about how you will make your tifo:

- **For banners, many teams create the image digitally using software such as Adobe Photoshop. They then project the image on to the fabric and use charcoal to sketch out the lines. If your school has a smartboard, interactive whiteboard or projector, you should use this to help you with your design. Without a projector, you can draw your design on a grid, then draw a grid on to your fabric to help you translate the image to the bigger size.**
- **If you have decided to create a two-stick tifo, you might need to use some basic sewing skills. You will also need the help of another person to help you hold the sticks and material to make sure it is sewn straight and not too loose.**
- **If you are creating a mosaic tifo, you will need to find out how many seats there are as well as how many rows and columns, then map out your idea on chart paper. You'll also have to plan how the people will know when and how to use the mosaics.**

Again, as tifos are often secret until match day, you might want to get feedback on your initial sketches from only a few people. You might choose the team captain, players or a classmate. Even though it is secret, it is important to get feedback at this stage. Feedback might help you to elevate your idea, but could also point out potential problems.

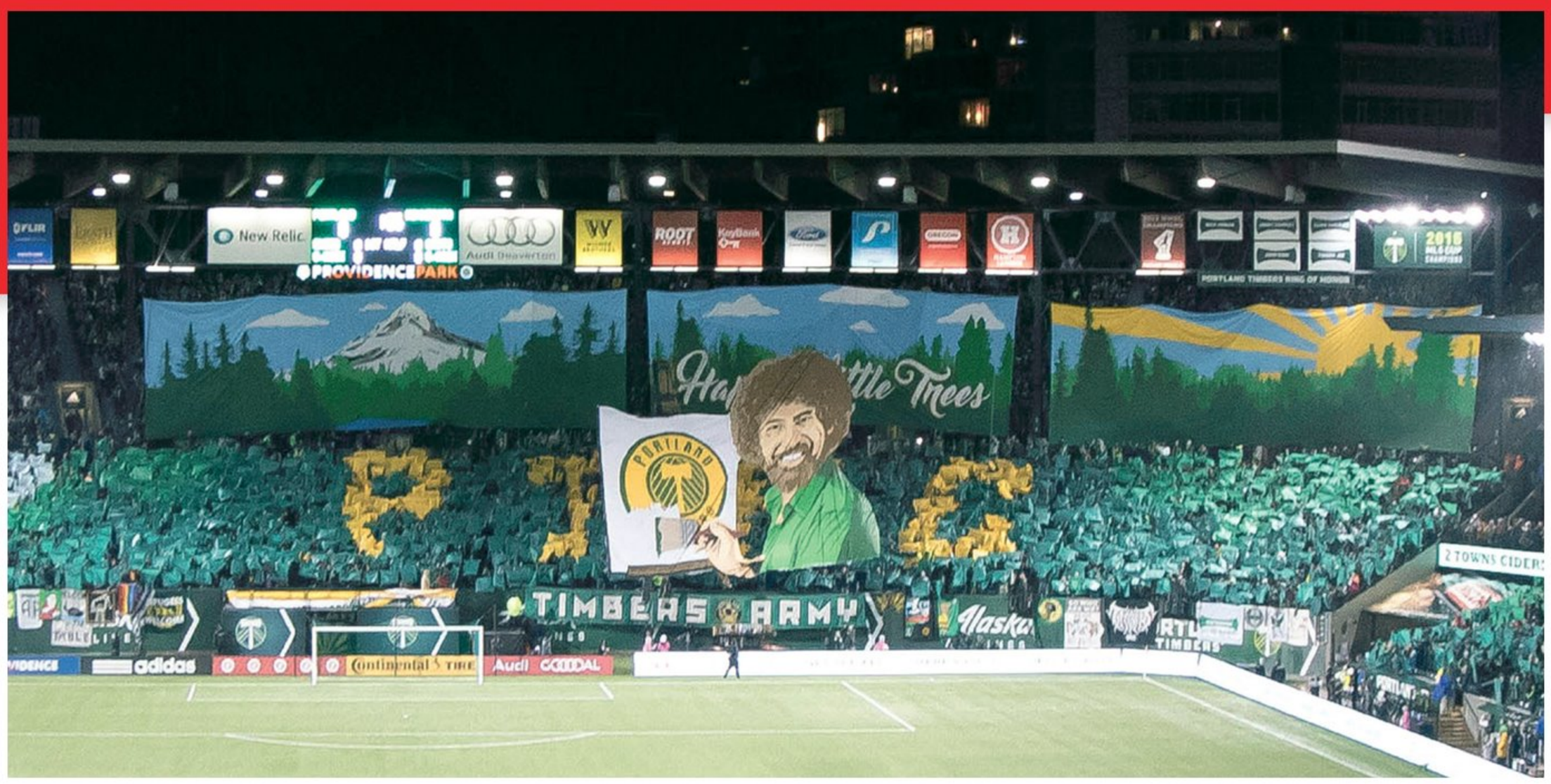
Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i, ii and iii).

MAKING YOUR TIFO

One of the nice things about making tifos is that they are usually done by a group. This is a great way to bring fans together before a match, and further builds on the sense of community that supporters' groups can feel. Apart from special cases, for example, if you have a tifo created by Pepe Perretta, most designs are anonymous. They are made by the fans, for the fans, and no one takes the glory! This is another secret element of tifo design.

Regardless of whether you are working as an individual or as part of a team, make sure you use other people to help you create your tifo. This could be as simple as someone holding up a sheet so that the image can be projected on to it while you sketch the outline, or someone holding the material tight while you sew. Collaboration is key to this chapter – remember, our statement of inquiry is: 'Teams become communities when they collaborate.'



■ **Figure 7.20** A big mistake was made when creating this tifo, but quick thinking and problem solving helped them make it look flawless

WHAT ABOUT WHEN THINGS GO WRONG?

The following advice comes from the tifo group for the Timbers Army (Portland Timbers) and Rose City Riveters (Portland Thorns FC).

> *'You have to be quick on your feet, quick to think of a solution. You may have done it 100 times, but on the 101st time it goes wrong, and there is no one there to fix it. Surround yourself with people who can see what adjustments need to be made and how to fix problems. Outside-of-the-box thinking is very important! It doesn't matter if you step in paint, or paint part of the tifo the wrong shade of blue – take a deep breath – it's OK – we'll find a way to fix it.'*

When making the large tifo in Figure 7.20, showing the American painter Bob Ross, the plan was to cut parts of the fabric out. These parts were not painted, but neither was the background of the canvas that Ross is shown painting, which was to be left white. The 'canvas' was accidently cut! The makers were able to come up with a solution, and used grommets, cable ties and white duct tape to fix the issue. You could not see the mistake at all during the display.

EXTENSION

The Timbers Army YouTube channel features many videos about their tifos: **www.youtube.com/user/TimbersArmy**



Figure 7.21 For this tifo performance at a Portland Thorns game, the material is suspended by ropes held above the heads of the supporters

ACTIVITY: Planning the performance

ATL

- Communication skills: Organize and depict information logically

Banner and mosaic displays often have an element of choreography. Someone needs to decide when they will be displayed during the match, and to make sure that everyone helping knows what to do (for example, do certain people need to pull ropes to lift a banner, or do people need to flip their mosaic tiles at different points to change the display?).

You need to decide on:

- **the best time to unveil the tifo during the game**
- **who you need to collaborate with to make it happen.**

Of course, some flags and banners are waved throughout the game. You might choose to design something that is used throughout, by individuals or pairs.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

ACTIVITY: Testing your tifo

ATL

- Creative-thinking skills: Make guesses, ask 'what if' questions and generate testable hypotheses

Design testing methods for your tifo. These should be based on your specifications and should be part of the feedback you gather when you display your tifo. Use them to measure the success of your design, as well as to **describe** any changes you would make. Make sure you describe the impact your tifo had on the coach, players and fans.

Design long-term testing methods. Although you will not use these, they might help you to predict the impact your tifos could have on the coach, players and fans in the future.

Assessment opportunities

- In this activity you have practised skills that are assessed using Criterion D: Evaluating (i, ii, iii and iv).

SUCCESS

When showing your tifo, you will want to **analyse** the impact it has on the coach, fans and players. You could do this through a simple survey or by interviewing people after the match. Make sure you design a test that is quick and easy for the participants to complete. You will want to gather feedback from as many people as possible for this. For a one-off match, you will mostly want to gather feedback about reactions to the tifo, such as emotional reactions, or whether they could recognize the images and references in your design.

Now, imagine you were bringing tifos to matches regularly. How might you **evaluate** their long-term impact? Just like in Science class, you would need to have some baseline data. What were the scores, crowd attendance or even the noise level of crowd cheering before you introduced the tifos? How has this changed since? Have the tifos impacted the results of the games?

THINK–PAIR–SHARE

How can the introduction of tifos and further involvement from the fans create a better sense of community in your school?

If you want to look at creating merchandise, including apparel, there are many websites that allow you to design online, including this one, which allows you to design your own football shirts: https://en.owayo.com/design-custom-football-jersey.htm

GAME-DAY EMOTIONS

Tifos can take a long time to make and are usually only shown for a short period of time, but there is a lot of adrenaline in the immediate build-up! Creators for the Timbers Army and Rose City Riveters say:

> *'We spend a long time making the tifos, and then during the game we don't see them, only photographs afterwards. There is a lot of tension and adrenaline leading up to displaying a tifo. When they are being displayed you are busy checking that everyone is OK, and might just be staring at a rope or the people next to you. There are a lot of emotions associated with game day – we all have our own rituals for dealing with this – some of us have to find some space, away from the crowds, to decompress afterwards.'*

Take action

- You could start a supporters' club in your school to promote and support your school's teams.
- You could look at the merchandise your school teams already have, such as t-shirts and stickers. Could you design more merchandise for them?

EXTENSION

Why not get involved with a local supporters' group. It could give you the opportunity to make giant tifos that will be shown at important matches.

Reflection

In this chapter we have found out what tifos are and who makes them. We have explored the design process that goes into making a tifo. We have taken action by creating our own tifos.

Use this table to evaluate and reflect on your own learning in this chapter.		
Questions we asked	**Answers we found**	**Any further questions now?**
Factual: What are tifos? How are tifos made? How important is brand identity for a team and for the fans?		
Conceptual: Why do people become fanatics? What is a community? How are fan groups a community?		
Debatable: Do tifos have an impact on the game?		

Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					

Learner profile attribute	How did you demonstrate your skills as a risk-taker in this chapter?
Risk-takers	

8 How might stickers help a good cause?

The products we own communicate a lot about our **beliefs and values**.

CONSIDER THESE QUESTIONS:

Factual: What are the current trends teenagers are following? When and where do we use stickers? How do people fundraise in your school?

Conceptual: How do charities and non-profit organizations use current trends for their own benefit? What do the products we own say about our beliefs and values?

Debatable: How can a mass-produced product, such as a sticker, help someone express their individuality?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

charity
non-profit
awareness



Figure 8.1 Stickers can be used as decoration

IN THIS CHAPTER WE WILL …

- **Find out** about fundraising.
- **Explore** if consumer needs influence design, or vice versa.
- **Take action** by creating stickers to raise money for a charity or non-profit organization of our choosing.



These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills

IB's *From Principles into Practice* says that:

> *'IB learners strive to be caring members of the community who demonstrate a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.'*

In this chapter you will create stickers that you can market and sell to your peers to raise money for a charity or non-profit organization of your choice. We will focus on analysing existing products, surveying your friends and classmates, and really understanding the current trends that appeal to teenagers. In this project you will be able to make a difference to an organization linked to a cause that you are passionate about.

This chapter has a strong service element, so you must make sure that you record a service reflection for this chapter.

THINK–PAIR–SHARE

What service projects do you know about in your school?

What activities have other students done to raise awareness, raise money, volunteer time or make change in another positive way?

We will reflect on this learner profile attribute …

- Caring – we will show how we can use design to support our commitment to service.

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

Why do people always host bake sales when they want to raise money?

GOING BEYOND THE BAKE

Many students raise money for service projects through bake sales. While this is an effective fundraising method, it often has no connection to the cause they are raising money for.

- What were the last three bake sales you can remember in your school?
- Who were they raising money for?

If you can remember the cakes, but not the causes, perhaps it is time to move beyond the bake sale! When you design your stickers in this chapter, they will have a clear link to the cause you are supporting. For example, if you are raising money for a local animal shelter, you might create stickers of cute kittens and puppies.



Figure 8.2 Aaron Draplin

MEET THE DESIGNER

Aaron Draplin – Draplin Design Co.

Aaron James Draplin, of Draplin Design Co., is known as someone who uses design to put positivity into the world. He has done designs for big companies for thousands of dollars, but has also designed logos for friends, once for the price of a burrito! His work focuses on logo design, but these logos are often printed in everything from water bottles to sweatshirts ... and of course, on stickers!! Draplin is known as one of the best logo designers in the world, which gives him choice when selecting which projects he works on. This means he can choose projects which he enjoys, are fun and which put some good into the world.

Link: **www.draplin.com**

Watch 'Aaron Draplin Takes On a Logo Design Challenge' on YouTube: **https://youtu.be/zOPA0NaeTBk**

Can you describe your process from initial idea to final product? Understand the client's design problem and go into the project thinking about how you are going to solve it – a lot of this has to do with listening. How could we make things better with these graphics? Look at the competition. Look for things not to do and to do. If you are going into a certain industry and they are always using the same colour to tell stories, use something else to stand out. Ask a bunch of questions of your client. When you first show them your first round of ideas, you are just showing

them some of the solutions. Then they can say what works and doesn't work.

What top tips do you have for designers? Don't be afraid to draw. Make notes! Make lists! Listen! Scratch down little ideas when you listen to someone telling you what they need help with. Follow your heart! The first thing you come up with might be the best – sometimes. Be attentive! Listen to yourself! Don't be quick to say no. Be good at saying yes. See the silver lining on every project. We are too quick to dismiss things. Everything is about compromise. If someone is giving you a hard time, or the project is not fun to do, make your decision to leave, but don't be too quick to do so! Don't follow trends too closely – it's fashion, it comes and goes. The people that use common sense and the principles of design, like clarity, scalability and good colour – those things still work – transcend what is subjectively cool. Don't hang your hat on the latest coolest thing.

How can design have a positive impact on the world? Don't be afraid to use your talents for good. Make something to help someone! There might be no money in it, but don't be afraid of it. Use graphic design to help people, to help yourself and to make things cool in your own life. Don't be afraid to show things you make for fun – it is not just a trade – I used to make mix-tapes, just as gifts for my friends. There is no pay check there, I did it for fun – this is where I learnt to love design first. You could be the person to make something cool for your school, your band or even your grandmother! This isn't something you have to do in some cubicle as a job, it's something which can impact every aspect of your life. Always keep a little bit of magic in your design.

What tips do you have for logo design? Make sure you can understand it quickly. It must be memorable. Make sure it works at the size of a dime, a softball, Instagram icon, Twitter avatar or on a sweatshirt. If you can't understand the logo when it is the size of your little finger nail, then it doesn't work. It needs to be consistent when it gets bigger too. It's about simplicity when it's needed – it's about complexity when it's needed.

How do you deal with vague design briefs? Well, how do you deal when your parents give you a vague reason to tidy your room? You fight back! You ask for reasons and information! Ask questions! Stop and say 'what do you love?', 'what's working?', 'what's not working?' Be professional and be human; ask for a little help when you need it.

How did you start loving design? I've always liked to make things – out of anything from wood to Lego. I was a young kid who could entertain myself. There's not always going to be a coach, or a parent, who can guide you – you have to make your own way. At a young age I would do this – I'd get lost in my own little universes, making things! I took what I loved and made it into a way to make a living! BE CURIOUS! Get interested young – it can explode into an awesome life.

Design situation

Imagine that your school has banned bake sales. They are fine with you raising money for a charity or non-profit organization, but the product sold must be linked to the organization's cause. You have decided to make stickers to raise awareness and money for a charity or non-profit you are passionate about.

For this sticker project, you will have to collaborate with other designers (classmates) to make a set of stickers to sell. Each student in a team will be tasked with creating one or two stickers to make up a sticker set. You'll have to work together to make sure the stickers are clearly part of the same series.

Picking a charity or non-profit for this chapter is very important. You will need to choose one that supports a cause you are passionate about, but also one that your classmates would be interested in. You'll also have to think about an organization that you could easily design stickers for.

Collaboration skills

You should work in a group for this project, with each student contributing at least one sticker to the set. During the process there will be times when you will work as individuals and times when you come together as a group. You may want to work individually when gathering inspiration, so that you can gather as many ideas as possible. You will need to work together when making decisions, such as writing your specifications, however.

It is important that everyone in the group feels valued and is able to show their hard work during this project, but it is also key that your stickers are clearly part of the same set. It might be worth making essential **agreements** (team rules) or breaking down and discussing the tasks. Finding the balance can be difficult, but it is an important social skill to master.

ACTIVITY: What stickers would work best?

ATL

- Transfer skills: Apply skills and knowledge in unfamiliar situations

Look at the summaries of the following organizations. What type of stickers could you make to sell to raise money for them? What would the sticker show (for example, 'a rainbow') and what style would you use (for example, 'bright and cartoony')? You might want to look at the organizations' websites before coming up with ideas. Jot down your ideas in your process journal.

- **Skateistan** (www.skateistan.org) **– a non-profit organization that provides skateboards to children in Afghanistan, Cambodia and South Africa. The group focuses on giving children – especially girls, children with disabilities and those living in poverty – opportunities to participate in sports.**
- **The Trevor Project** (www.thetrevorproject.org) **– this group provides crisis intervention and suicide prevention lifelines to LGBTQ youth in the UK. This includes supporting LGBTQ youth who have been kicked out of their homes.**
- **The Sloth Institute** (www.theslothinstitutecostarica.org) **– it focuses on research, education and releasing hand-raised and injured sloths back into the rainforest once they have mended.**

Share your ideas with your classmates. Did they come up with similar ideas? Do you think these ideas would sell well? To whom?

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

Information and media literacy skills

Make sure that the information you are looking at is up to date. There is no point deciding to raise money to stop an animal becoming extinct, then finding out it already is extinct, or raising money to build a school, then realizing the school has already been built!

When using a search engine or a library database, or even when looking on YouTube, you can use advanced search features to choose a publication date. You can also put the date (current year) in the search bar.

When you are viewing a website, you can often see when the webpage was published or when it was last updated in the footer at the bottom of the page. If the website has a blog or news section, you can usually see when the last update was made there too.

ACTIVITY: UN Global Goals

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

The UN Global Goals, shown in Figure 8.3, cover big, broad topics that we should be focusing on to improve the world. These goals might help you to select a cause that you are interested in raising money for.

Pick one of the UN Global Goals and use it to brainstorm issues or causes you want to research. Remember that the goals are broad, so you might want to break it down into smaller parts.

On the UN Global Goals website – **www.globalgoals.org** – you can click on a goal and see how it is broken down into separate targets. An example of this is UN Global Goal 10, reduced inequalities. It is broken down into ten smaller targets, for example 10.3: 'Ensure equal opportunities and end discrimination.' You can break these down further, however; for example, you might then think about discrimination due to race, gender, religious beliefs or sexual orientation.

Once you have generated some different ideas, pick out one you will develop further and **explain** why.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).



Figure 8.3 UN Global Goals for Sustainable Development

EXTENSION

As stickers are cheap to make, but don't sell for huge amounts, you should think about supporting a smaller organization that can do more with your donation. Many charities and non-profit organizations say how far their donations can go on their websites.

Here are some examples:

www.georgiainnocenceproject.org/act/donate

www.goodgifts.org

www.kiva.org

ACTIVITY: Justifying your final selection

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

Now that you have thought about the cause (problem) you care about, research online to find facts about this issue that will help you to **justify** why you need to make a product to solve this problem. You will then need to find a charity or non-profit and justify why this is the best organization to raise money for.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

STOP–LOOK–LISTEN

This is a great routine that you can use to gather information to show why your cause is important. It will help you to generate some questions to better understand the cause, to find useful sources, and to **evaluate** whether those sources are biased or not.

Start by making a claim, for example: 'The cause I think is most worth fundraising for is …'

1. **Stop: Be clear about the claim. Define your question from your list of facts and uncertainties.**
2. **Look: Find your sources. Where will you look? Consider obvious and non-obvious places.**
3. **Listen: Hear what the sources tell you with an open mind. Is it possible for your source to be biased? How does it affect your information?**

Once you have identified the cause you care most about, it is time to find a charity or non-profit that supports this cause. It is best to look for a local organization first, as this will give you an opportunity to fundraise to improve your local community. If the organization is local, you might get more opportunities to support it in the future, for example through volunteering. Try to find a smaller charity too, which will benefit more from the money you raise from your sticker sale.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

When and where do we use stickers?

ACTIVITY: Laptop stickers



■ **Figure 8.4** Who owns this laptop?

People use stickers to cover lots of things, but teenagers often use them to cover their notebooks, lockers and laptops. Look at the sticker-covered laptop above. What can you guess about the person who owns this laptop? Can you guess their gender, age, interests? What might this person value and believe?

STEP INSIDE AND BACK

Now let's look at your classmate's stickers.

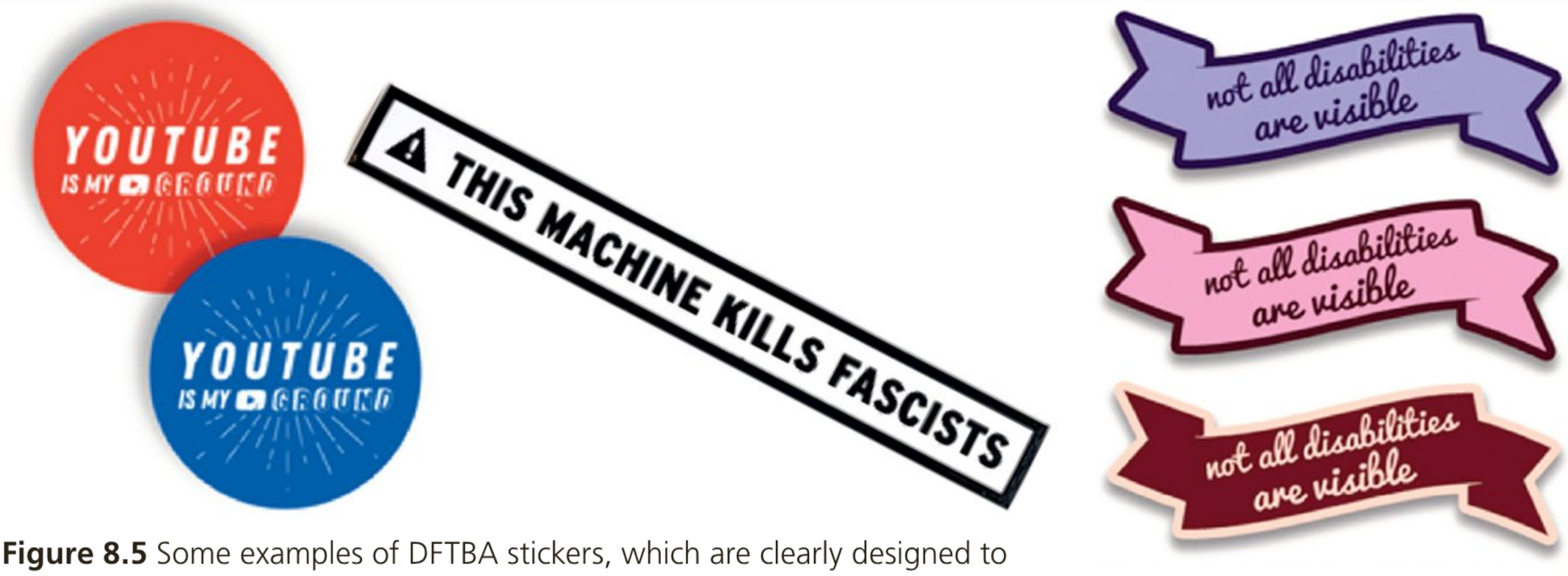
- **Choose: identify one of your classmate's sticker-covered laptops or notebooks. Try to choose someone you don't know so well. Perhaps you could look at a sticker-covered item from a student in another class – your teacher may be able to provide photos of these items to help you.**
- **Step inside: what is your best guess on what this person might know, believe, care about, and why?**
- **Step outside: reflect on your best guess. How close might it be to this person's actual perspective? What else do you need to find out?**

Use this last prompt to come up with some interview questions. You might choose to do the interview face to face or by email. What else do you want to know about the person and their stickers? The student might now realize that the stickers reveal a lot about who they are, so make sure you ask big, open questions that help them to reflect too. Some ideas to get you started include:

- **Which is your favourite sticker and why?**
- **How do you go about buying stickers? Do you search out specific ones or stumble across them?**
- **Do you think someone who has not seen your laptop/notebook, but knows you well, would be able to guess that it belongs to you? Why/Why not?**

◆ Assessment opportunities

◆ This activity can be assessed using Criterion A: Inquiring and analysing (ii).



■ **Figure 8.5** Some examples of DFTBA stickers, which are clearly designed to go on laptops; look at their website and see if you can find stickers that are clearly designed to go on car bumpers too

■ **Figure 8.6** 'Not all disabilities are visible' stickers

DON'T FORGET TO BE AWESOME (DFTBA)

DFTBA was started by two brothers, Hank Green and John Green. You might know them from their YouTube channels – VlogBrothers, CrashCourse and SciShow – or you might recognize John Green as the author of *The Fault in our Stars*, *Looking for Alaska*, *Paper Towns* and other popular, award-winning books.

Their motto – don't forget to be awesome – is a constant reminder to put good into the world. One way they do this is through the DFTBA store, where they sell lots of high-quality merchandise including stickers. Over 90 per cent of their profits go to charity, and they change the charities or non-profits they are raising money for regularly. They have included organizations focusing on the maternal mortality rate in Sierra Leone, and the Harry Potter Alliance, a non-profit that focuses on activism, mostly related to human rights, using Harry Potter as its theme.

ACTIVITY: DFTBA

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions



■ **Figure 8.7** Stickers from DFTBA

DFTBA is all about making the world more awesome, which includes making it a fairer and safer place for people with physical and mental health issues, as well as LGBTQ people. Look at the other types of merchandise on the DFTBA store, such as apparel and pins. What can you tell about the beliefs and values of DFTBA?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

GETTING TO KNOW YOUR CUSTOMER

At this point you have already done some research into your charity or non-profit, and you know a little bit about what they do and why they do it. The next part of your research is going to be into your target audience. You already know that you will be selling your stickers at school, to students (and possibly parents and teachers, but mostly students), but you need to find out more about your customer before you start designing.

As you are designing for a group of people (students in your school) instead of an individual, you should gather answers from as many people as possible before you start designing. This means that a survey is much more suitable than an interview.

Before you create your survey, you need to consider the things you *need* to know, as well as the things you *want* to know.

You will base your decisions on the things that you need to know, such as how much you should charge for each sticker. The things you want to know might influence your decision making, but they don't drive it (for example, the colours in the sticker).

Make a table similar to Table 8.1 below and jot down your ideas, adding in more rows as necessary. You will need this to help you write your survey.

Need	Want
How much would you spend on a sticker?	What are your favourite colours?

Table 8.1 What do I need and want to know about my customer?

ACTIVITY: Making a survey

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Now that you have listed the things you need and want to know, you should turn these into survey questions. There are different types of questions that you can use, which are described in Table 8.2.

Remember, you don't just do a survey for the sake of it – you need to use the information to help you develop your ideas. The more your product is informed by research, the greater your chance of success.

There are many free survey tools online, including Google Forms and Survey Monkey. By creating your form digitally, you will be able to **analyse** the data quickly and even make graphs to show the answers.

Once you have designed your survey, ask your teacher or another classmate to check it over to make sure that you are using the right question types. When you are happy with it, you should send it out. If everyone in your class is creating a survey, and they are all emailed at the same time, you are unlikely to get many replies, so consider doing the following:

- **have a laptop set up during break/lunch and invite people to fill in the form**
- **ask for the form (and your classmates' forms) to be added to a newsletter or to be completed in homeroom**
- **ask your design teacher to have other design classes fill in the form**
- **put up posters with a link or a QR code to the form.**

Multiple-choice	For this question, you give multiple answers but the person filling in the form can only pick one of them. You should use this when there is only one true answer. Example question: 'What grade are you in?' Possible answers: ■ 6–8 ■ 9–10 ■ 11–12
Checklist	For this question, you give multiple answers and the person filling in the form can pick any number of them. Example question: 'Which of the following colours do you like?' Possible answers: ■ dark colours ■ pastel colours ■ bright colours
Open (sometimes separated into 'short' or 'paragraph')	Use open questions when you want someone to write an answer, for example to give you feedback, share their opinions and ideas, or if you want to add an 'any other comments' box. You would not use this for questions where there are only limited answers; for example, you would not use it to find out what grade a student is in as some people might say 'six', others '6', and others 'I am in sixth grade'. This would make it hard to analyse data.
Linear	Use this when you want someone to answer on a scale. These questions are often used for opinions and feedback. For example, if you have a design for a sticker that you like and you want to see if your customers like it too, you could put an image into your survey along with a linear scale question, such as: 'What do you think of this sticker?' Hate it 0 1 2 3 4 5 Love it
Bonus	Consider marking the questions that you *need* to know as 'required' – this means the person must fill them in. The questions that you *want* to know could be optional.

■ **Table 8.2** Question types

◆ Assessment opportunities

◆ This activity can be assessed using Criterion A: Inquiring and analysing (ii).

Once you have your survey data, **analyse** the results. Looking at the answers, what style of sticker do you think will sell best? How much will you be able to sell the stickers for? What else can you find out about your customers' preferences? Is there anything that surprised you? Make sure you write your findings down, so that everyone in your team can see these results. They will help you when you write your design brief and specifications, and start developing your ideas further.

You will also look at some existing stickers and do a few brainstorming activities before you finalize your designs.

ACTIVITY: Analysing existing stickers

ATL

Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

It's now time to analyse some existing stickers. You can use some of the stickers shown in Figure 8.8, find your own, or even analyse your classmates' stickers. In this activity you will be analysing the different design elements of the stickers, including colour, lines, shapes, texture, space and style. You may also use a different method of analysis, for example thinking about who the stickers would appeal to, and what they might say about the user's beliefs and values.

- **Colour: what do you notice about the colours? Are they bright/soft/contrasting? Are they solid blocks of colour? Do the colours symbolize anything?**



Figure 8.8 Many sticker designers set up shops online on websites such as Etsy; these Etsy stickers were created by (left to right, top row then bottom row) SeekPrints, DesignosaurYEAH, LittleFernBurrow, ChloeFaeDesigns, Alexoright, Fableandblack, DesignosaurYEAH, tinadiydesign and Colorinadesigns

- **Lines:** are the lines thick or thin? Are they coloured or all black? Are they straight or curved? Are the lines soft or angular?
- **Shapes:** are the shapes geometric or organic? Do they look realistic or are they exaggerated? Is the sticker busy or simplistic?
- **Texture:** do the stickers only have block colours or do they give an illusion of texture? Are there any shadows?
- **Space:** is there any blank space? Is there a background or is the sticker shaped around the object? How are items positioned in the space?
- **Style:** how would you **describe** the style? Does it remind you of any other graphics you have seen before? Does the illustration look realistic or stylized?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

COLOUR–SYMBOL–IMAGE

Every member of your group should do this activity without being able to see each other's ideas.

Thinking about the cause/issue, or the charity or non-profit organization:

- **choose a colour that you feel best represents or captures the essence**
- **choose a symbol that you feel best represents or captures the essence**
- **choose an image that you feel best represents or captures the essence.**

Compare your results. Did you have any similarities? Did someone else's colour, symbol or image give you any new ideas?



Figure 8.9 Colour, symbol, image

GENERATE–SORT–CONNECT–ELABORATE

As a team you have probably generated many ideas through analysing other stickers, surveying students in your school and doing the Colour–Symbol–Image activity. Now it is time to start talking about your own ideas so that you can come up with a clear direction.

- **Generate a list of ideas and initial thoughts that come to mind when you think about your stickers.**
- **Sort your ideas according to how central or tangential they are. Place central ideas near the centre and more tangential ideas towards the outside of the page.**
- **Link your ideas by drawing connecting lines between ideas that have something in common. Write a short sentence to explain how the ideas are connected.**
- **Elaborate on any of the ideas/thoughts you have written so far by adding new ideas that expand, extend or add to your initial ideas.**

After noticing the themes and seeing the key ideas emerging, you should be able to write your design brief. Remember, **a design brief is a paragraph summarizing your research and saying what you are going to make**. Try to include the content of your stickers and the style that you plan to use.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

Research skills

Do you need to find a very specific colour? Maybe you want to use the colour your charity includes in their logo, or maybe you want to use the colour of your UN Global Goal? There are many websites that allow you to upload an image and use an eye-dropper tool to find specific colours. One website you could try is: **https://imagecolorpicker.com/en/**

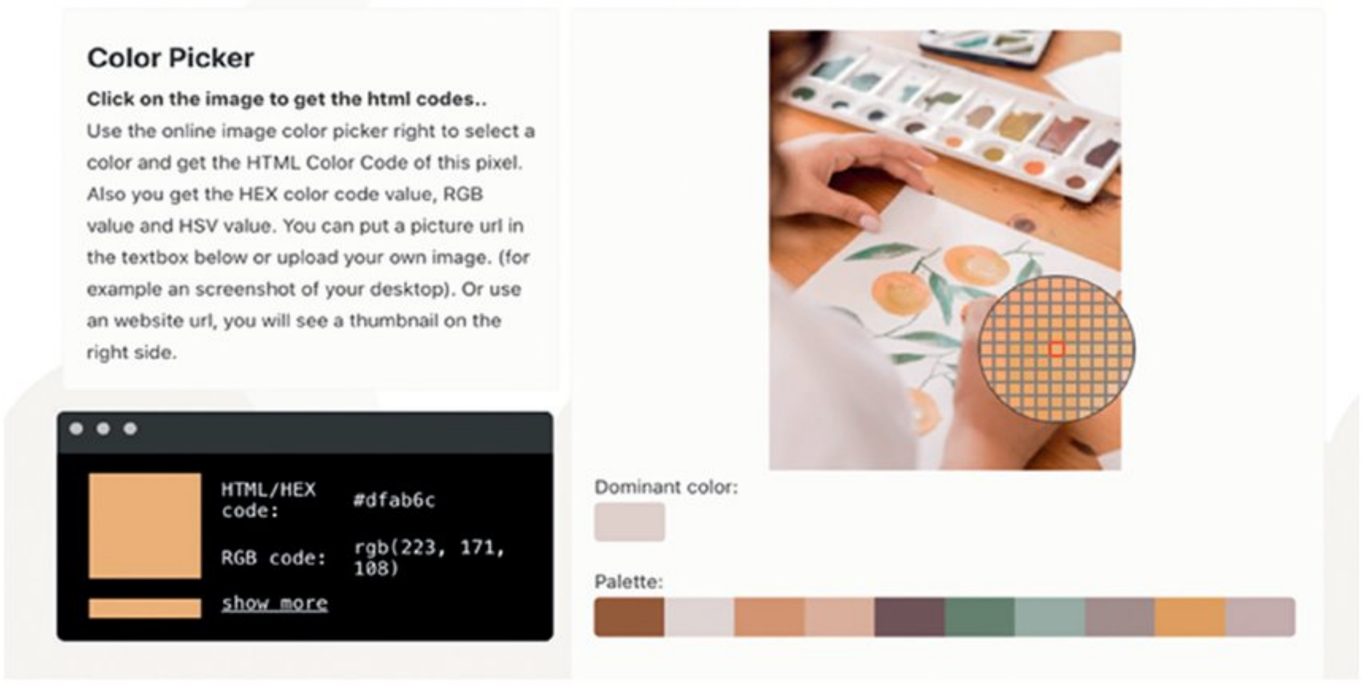
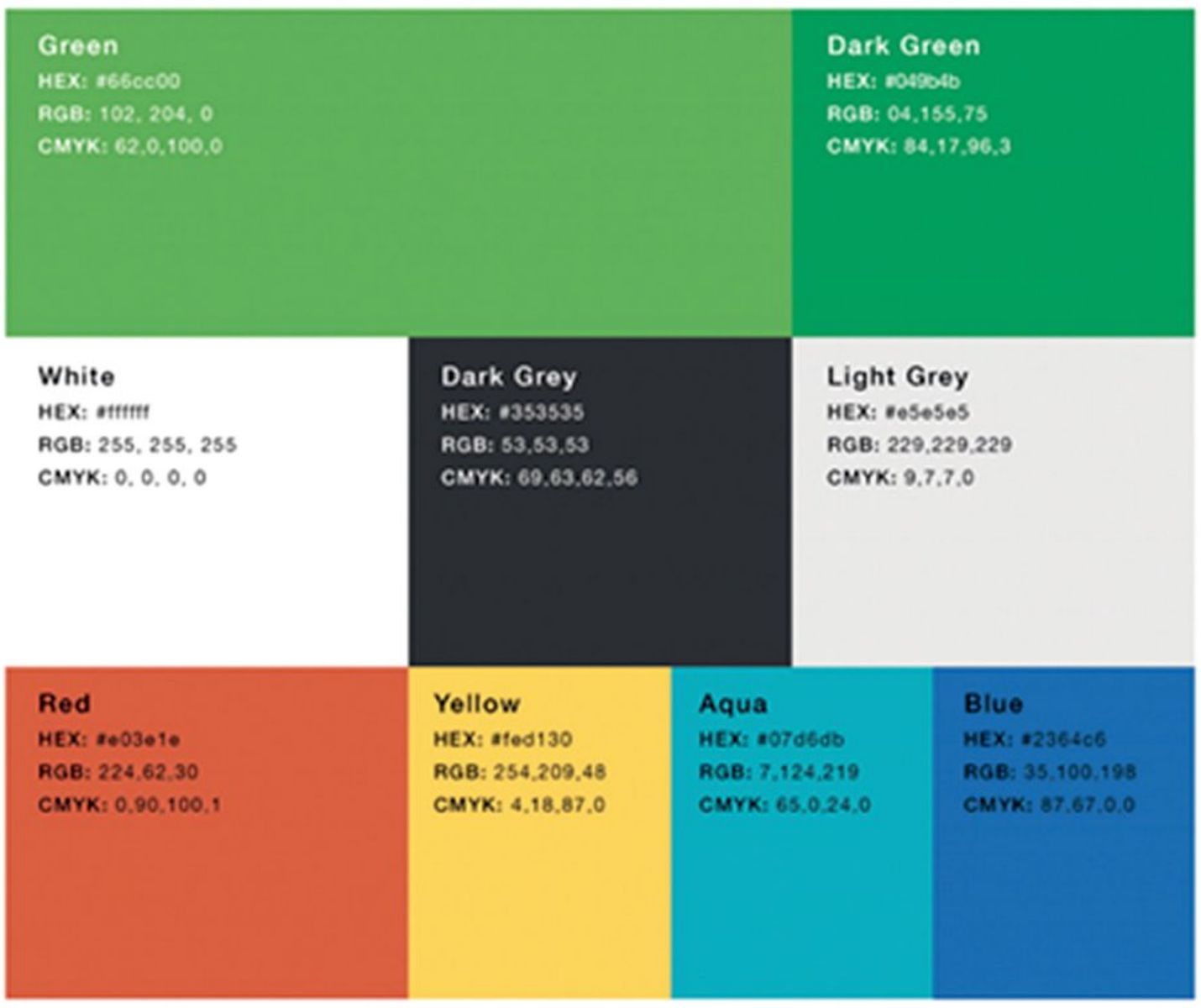


Figure 8.10 If you've been experimenting with colour in your process journal and have found colours you really like, you can also take a photograph and upload it to https://imagecolorpicker.com/en/

BRAND GUIDELINES

Most companies have their own recognizable style. This is not something done by accident, and the company will usually have brand guidelines (design instructions) to make sure that everything associated with them sticks to that recognizable style. Brand guidelines include a lot of helpful content for designers, including the exact fonts and colours to use. It might also include some descriptive words about the emotion or style of their work, or even about the type of language and voice to use.

Colours are a distinct expression of Greenpeace's personality. Consistent use of our core colours helps to maintain our brand presence and inject energy and depth into our storytelling methods. These colours embody our values, spirit and conviction. To ensure consistency, colours should always utilise the appropriate values shown below.



I Colours sized proportionally, relative to how much they're useful in Greenpeace collateral.

Green is Greenpeace's main colour — The Greenpeace green (#66cc00) is most commonly used in the logo and features prominently as an emphasis colour in both our print and digital communications. It is not essential that you use this colour in all of your communications, but be aware that the logo should only ever appear in this green, black or white.

Dark green, white, light grey, and dark grey are secondary, neutral colours. They are good for backgrounds, and balancing out the brighter, more intense colours.

Red is our main accent colour. Use it for buttons, highlights, and calling attention to the most important parts of your design.

Aqua, blue and yellow are secondary accent colours. When you're already using all the other colours, a high-contrast colour from this list can provide variety and give you more alternatives to work with.

What else can you find out about Greenpeace's style? Can you find out how they use fonts, photos, voice and their logo? Look at **www.greenpeace.org.au/our-style**

DISCUSS

Brand guidelines are closely tied to brand identity. What identity does a company want? How do they want their customers to view them? Do they want to be seen as fun, serious, sophisticated or silly? Who do they want their customer to be?

Sometimes very similar products, such as razors, have completely different brand identities, as they are pitched towards different people.

■ **Figure 8.11** Greenpeace Australia shares some of their brand guidelines on their website – this is what they say about the colours they use

ACTIVITY: Brand identity

ATL

- Critical-thinking skills: Draw reasonable conclusions and generalizations







Figure 8.12 Brand guidelines for Woodruff Park in Atlanta, USA

What identity do you think Woodruff Park wants? Pick five words to **describe** the park.

BIG NO NOS

Brand guidelines don't just tell you what colours and fonts to use; sometimes they tell you the things you must not do! This might include not putting their logo on something of a similar colour, or not changing the dimensions of the logo.

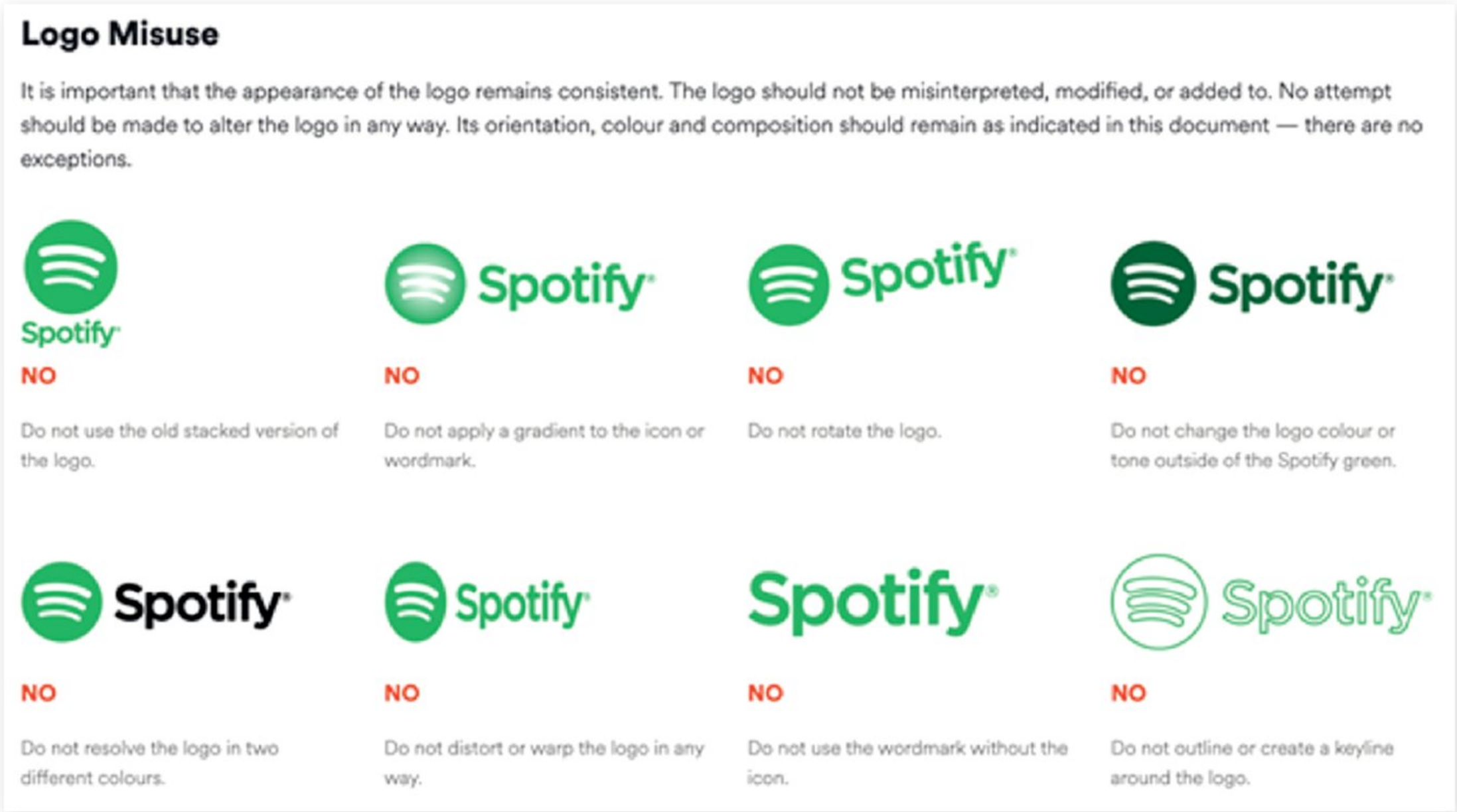


Figure 8.13 Here Spotify tells developers how to use their logo properly, and what not to do

Can something as simple as a sticker help someone express themselves?

THINK–PAIR–SHARE

Think about the company Coca-Cola. What do you think might be included in their brand guidelines? Think about colours, fonts, style, logos and voice.

EXTENSION

Look online to see what other company brand guidelines you can find. You might want to search for NASA, IKEA, Lego or Subway.

ACTIVITY: Writing your specifications

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

We often think of the design brief as being the pitch for our product. Once our pitch is approved, we use design specifications almost as a contract with our client. We also use them to help measure the success of the final product.

For this project, you are working in a group to make a set of stickers that must clearly be part of the same set. This means that, although the stickers are different, they should still share the same brand identity. When writing specifications as a group, you should imagine that you are creating your own brand guidelines.

As a team you will have to consider what similarities you want between them. You might consider selecting a few colours, so you share the same colour palette, and also decide on things such as line thickness, style and font. You will also have to agree on similar content; for example, if you are focusing on endangered animals, are you all going to include the whole body of the animal or just the face? Will your designs be realistic looking or have a different style? You might also want to think about who is responsible for what; for example, if you are focusing on endangered animals, are you each going to make a sticker of a different animal? How will the animals be connected; for example, are they all critically endangered? Are they all from the same part of the world or similar habitats? Are they endangered because of the same reason? Are they all mammals?

For this project you will need to write specifications for the aesthetics, size and cost. You may have multiple specifications under each specification type; for example, you might have aesthetics specifications for colours, line thickness, style and font.

Use Table 8.3 as a template. Make sure you write your reasons clearly – they could be based on your existing sticker analysis, your customer survey, or information you learnt about the charity.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

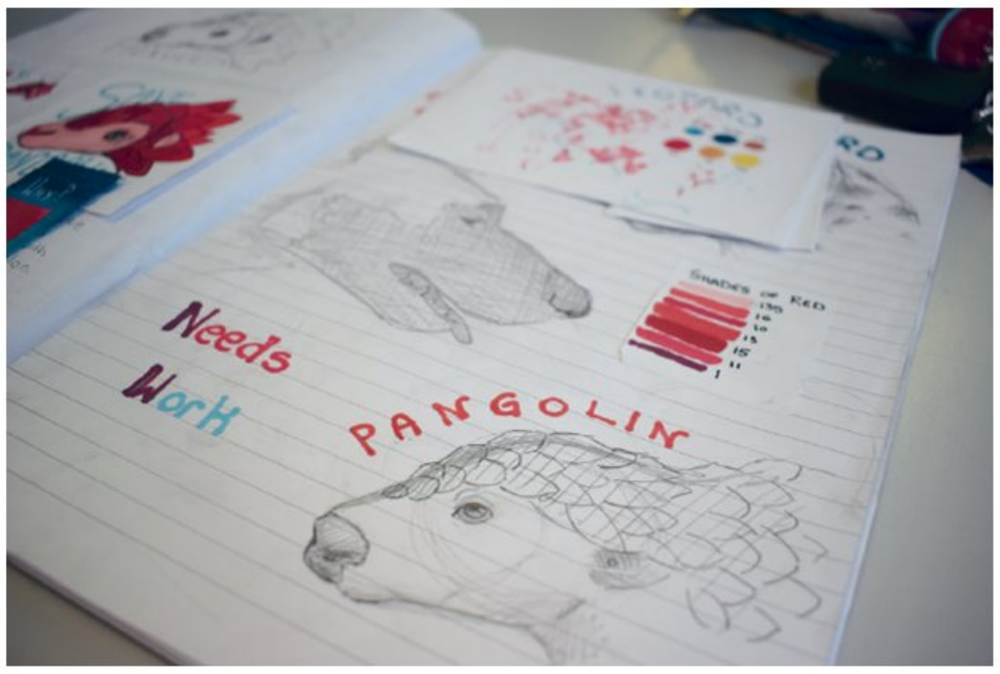
Specification type	Our specification	Reason
e.g. Aesthetic	*e.g. We will use the Open Sans font.*	*e.g. This was the most popular font in our customer survey.*
Aesthetic		
Size		
Cost		

Table 8.3 Specifications or brand guidelines for your stickers

ACTIVITY: Get sketching

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries



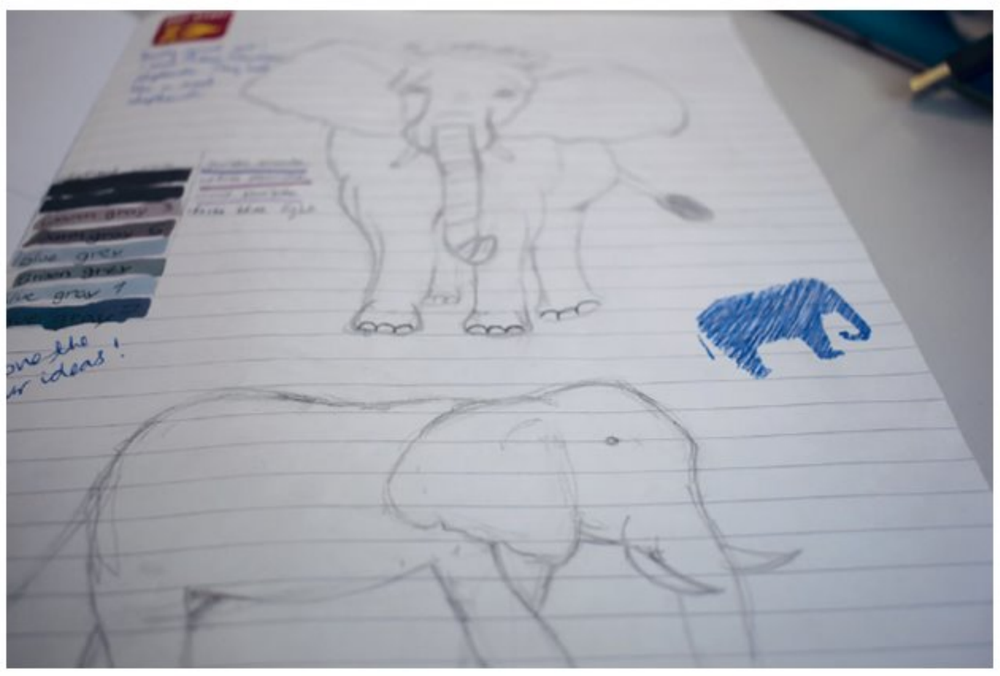




Figure 8.14 Initial sketches drawn by three members of the same group

When you have finalized your specifications, start your initial sketching. You should aim to draw at least three different sketches. You might end up developing one of those further, or you might combine ideas. Even if you are set on one that you like best, you might get feedback from classmates that leads you to adapt your ideas, or you might find out that they prefer the sketch you were least fond of.

As you are working in a group, keep an eye on your group's initial sketches as they might give you more ideas. Make sure that your sketches follow the specifications that you agreed, and that they match the sketches of the other people in your group.

When you have done several initial sketches, you must get feedback from your group. Which idea do they think works best with their own? Do they have any suggestions for improvements?

As a group, once you have picked out the sketches you think work best, get some more feedback from the rest of your classmates. Do they agree? Do they have any suggestions for improvements?

As a group, select the final images to develop. Make sure you **justify** your reasons why, based on feedback and how closely the sketches follow your specifications.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).



Figure 8.15 Before you start creating your sticker digitally, make sure you create a more detailed sketch with colours; compare it with your group's detailed sketches to make sure they work well together; this is a great chance to make final changes before you make your stickers

If your school has an electronic cutting machine or cutting plotter, such as a Cricut or a Silhouette, you can add a path that will have the machine cut out your stickers. If you do not have a machine like this, you may have to cut your stickers out by hand. Remember, you should decide how you will do this as a group – for example, will your stickers all be the same shape, or will you all cut the same size border around your illustrations?

ACTIVITY: Getting technical

ATL

- Creative-thinking skills: Apply existing knowledge to generate new ideas, products or processes

Before you start creating your sticker digitally, you need to know the basics of the illustration software you will be using. There are usually tutorials on software websites, but there are also many tutorials to be found on YouTube, as well as short courses on e-learning websites such as Udemy.

You might want to follow some tutorials on making basic vector characters or turning photographs into illustrations before you start using your software. Some online tutorials will show you step by step, others will be a sped-up video of someone using the software, which you can slow down and follow along with.

You might also want to take a screenshot of the toolbar in your illustration software. Print it out and stick it into your process journal. You can then label the name of each tool along with a description of what it does.

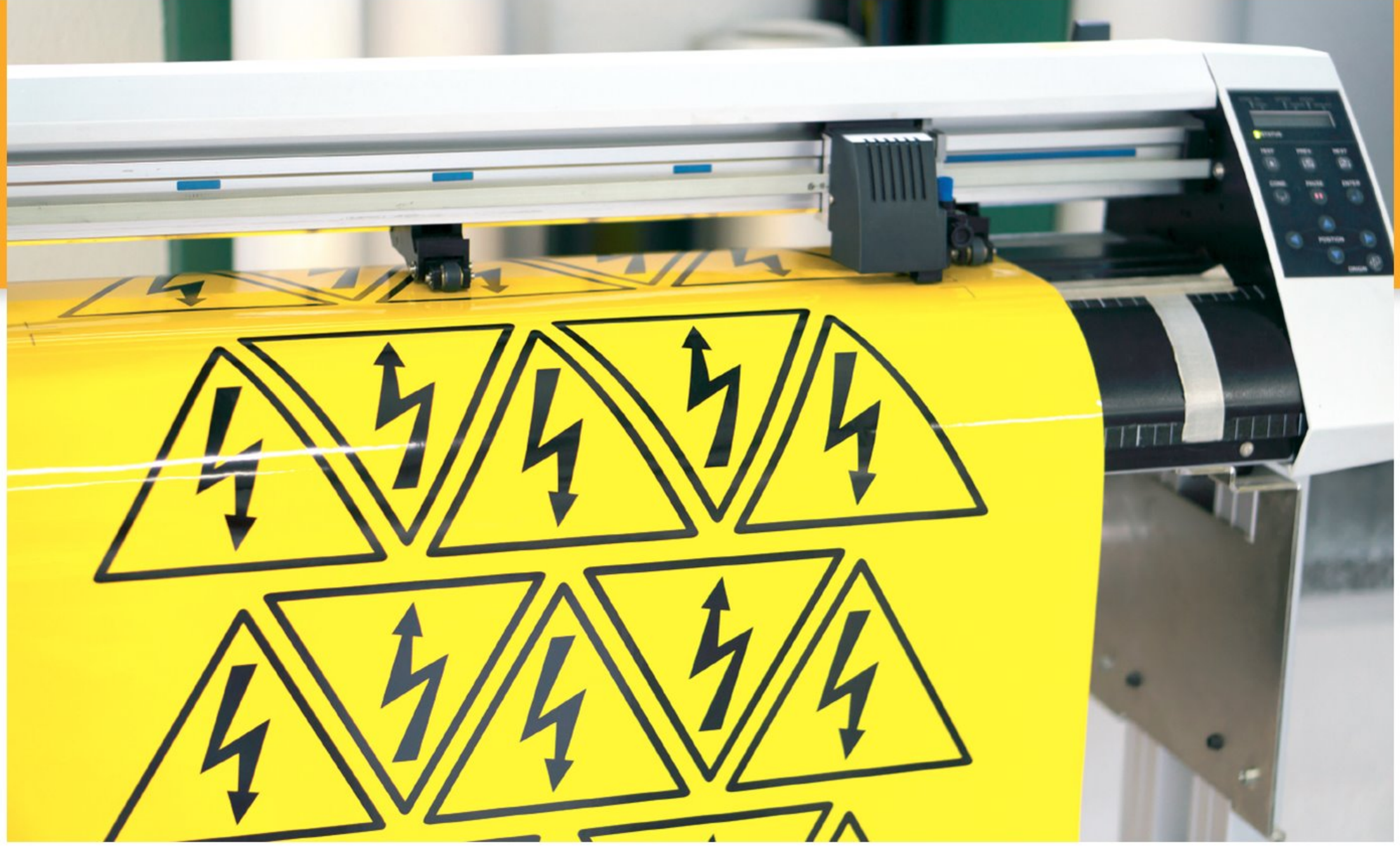


Figure 8.16 This machine is cutting a thin line around each icon so that they can be peeled off as individual stickers

Illustration software you might use includes Adobe Illustrator, Affinity Designer, GIMP, Gravit Designer, Inkscape or Vectr.

Creative-thinking skills

As you are creating your illustrations it is important to take screenshots showing the different stages. You should also take photographs to show any different tools that you have used and a photograph of all your layers. A lot of creative thinking goes into creating digital illustrations, but without seeing the process this is hard to evidence.

Along with taking regular screenshots, you might want to save your illustration regularly, with different names to show different versions. If you spot a mistake when you have almost finished your illustration, you can easily go back to an earlier version to fix it.

Creative thinking as a designer can often be summed up as 'working smart, not working hard'.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii).

Communication skills

When you sell your stickers, you are obviously focusing on raising money for your charity or non-profit organization. You might also want to raise awareness of the issue or what the charity or non-profit actually does. If you are selling at a table, consider having some printouts with information about this. If you are selling online, make sure you have a link to the organization's website and clear information about them.

You might want to include some facts from your investigation stage. You might not have long to speak to people, so try to think of a quick 10- to 30-second summary you can deliver – this could even be one key sentence, or something your team could say when they are approaching people about the stickers.

! Take action

! Now that you are an excellent sticker designer, why not see if anyone in your school needs stickers. You could create some for a sports team or club, to raise money, but also for people to show school spirit. You could also make stickers for teachers, especially primary school teachers, for when they give feedback on their students' work.

! You could open your own online shop, selling your sticker designs!

ACTIVITY: Evaluating your stickers

■ ATL

■ Information literacy skills: Process data and report results

Just like normal, you should assess the stickers against your design specifications. One of the most important things to **evaluate** for a fundraising project is how much money you made. How many stickers did you sell? Do you think you could sell more if you made more?

You could also ask the people who bought (or chose not to buy) your stickers for general feedback and to find out what they thought about your sticker designs. As you will be gathering feedback from multiple people, you might want to create another survey. You could also ask what they learnt about your organization, and whether their actions might change as a result.

With the data gathered, you need to measure the impact of your product:

- **What can your organization do with the money raised?**
- **What impact will your stickers have on the people who bought them? Will they look up your charity? Do they know more about the issue now?**

◆ Assessment opportunities

◆ This activity can be assessed using Criterion D: Evaluating (iv).

EXTENSION

Check out Stinckers. Two artists bought up second-hand vending machines (similar to gumball machines, but for stickers and temporary tattoos) then asked artists to design stickers that fit the machines. Now they have machines around the world, including in the USA, Brazil and the UK, usually in comic or record shops. Check out their website to find out about submitting your own designs: **www.stinckers.com**



■ **Figure 8.17** Stinckers vending machine

If this interests you, check out Art-o-Mat. They have converted old cigarette machines into places where you can purchase art: **www.artomat.org**

Reflection

In this chapter you have thought about how you can use your design skills to raise both money and awareness of a charity or non-profit organization. Service can often be broken into three categories – talent (using your talent to make something to make a positive change), time (spending your time to help someone else) and treasure (raising/donating money) – in this chapter you have done all three things!

As IB designers, we make sure we are caring and principled, which you have demonstrated during this chapter. Although you have completed this chapter, there is nothing to stop you from continuing this project or finding other ways that you can use your design skills to improve the world around you.

Use this table to evaluate and reflect on your own learning in this chapter.						
Questions we asked	**Answers we found**	**Any further questions now?**				
Factual: What are the current trends teenagers are following? When and where do we use stickers? How do people fundraise in your school?						
Conceptual: How do charities and non-profit organizations use current trends for their own benefit? What do the products we own say about our beliefs and values?						
Debatable: How can a mass-produced product, such as a sticker, help someone express their individuality?						
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**				
		Novice	**Learner**	**Practitioner**	**Expert**	
Communication skills						
Collaboration skills						
Information literacy skills						
Critical-thinking skills						
Creative-thinking skills						
Transfer skills						
Learner profile attribute	Reflect on the importance of being caring for your learning in this chapter.					
Caring						

9 Can an object be playful, even if it is not meant for playing with?

Some objects have no other **function** than to **communicate playfulness and delight**.

CONSIDER THESE QUESTIONS:

Factual: What toys do people collect? Who collects toys? What is the role of toys in Japanese culture?

Conceptual: What makes something cool? Why do 'blind box' editions make toys more desirable? How can a designer make an object that communicates a sense of playfulness?

Debatable: Should all toys be played with? Can toys be art?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

personified

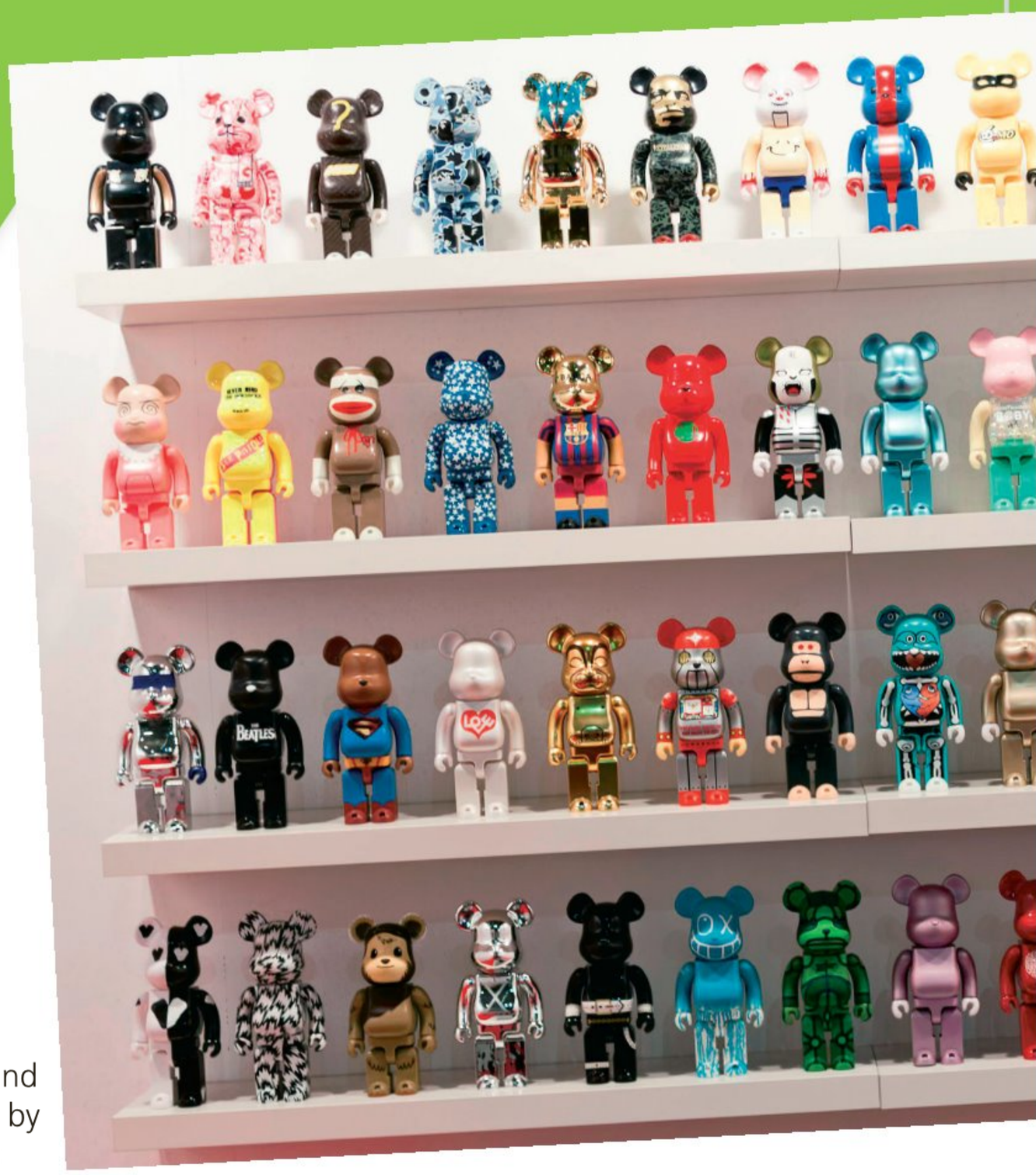


Figure 9.1 Bearbrick toys, created by the company Medicom Toy and often designed by different artists

IN THIS CHAPTER WE WILL …

- **Find out** about designer/art toys.
- **Explore** the works of famous art toy designers.
- **Take action** by creating our own art toy.

We will reflect on this learner profile attribute …

- Open-minded – during this chapter your definition of a 'toy' may change. We will also be looking at toys from other cultures.



Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Creative-thinking skills
- Critical-thinking skills

ACTIVITY: Are you a collector?

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Many people collect different types of objects or items that are special to them. Usually these items are for display only and are not interacted with. Popular collections include figurines, coins, baseball and other trading cards, and stamps.

Make a collage to show objects that you collect, or objects that are special to you. If you do not collect anything, find a teacher, classmate or family member who does and make a collage showing their collection.

Underneath your collage, answer the following questions:

- **Why do you/they collect these items?**
- **What makes them special?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Japan has long been known around the world for toy production, with toys being one of the first export bans to be lifted after the Second World War. Popular toy trends in Japan from the 1960s to 1990s have included monsters, superheroes and robots. More recently there has been a trend for retro-style toys, for example remaking popular 1970s superhero toys.

Play is an important part of Japanese culture, which can be seen in the popularity of manga, anime, cosplay and toys. By understanding a bit more about mass-produced Japanese toys, we can better understand their influences on designer toys today.

What is the role of toys in Japanese culture?

ART TOYS (OR DESIGNER TOYS)

Designer toys first appeared in Japan in the 1990s, at the same time that mass toy production was moving from Japan to China. Designer toys are now popular around the world, but many are still influenced by Japanese toy design.

The toys are usually made by individuals or small companies, though sometimes designers use larger companies to produce small runs of their toys, or sometimes just the base, with the designer still painting the toys individually. The toys are usually made from resin or vinyl but can be made from a variety of materials. Many of the designers making them are illustrators, painters or graphic designers.

Although many companies make collectible toys, we usually think of art toys as having a character created by an artist or collective. In recent years many art toys have been given the status of art and have been shown in leading galleries, such as MoMA in New York.

Link: Zona Toys '¿Qué son los Art Toys?' (What are Art Toys?): **www.zonatoys.com/que-son-los-art-toys**

DOCUMENTING MAKING YOUR TOY

Take photographs and/or screenshots when making your toy to document the process. Try to take at least one image of every step of your plan. Imagine that you are using your plan, alongside these photographs, to make a tutorial so other people can make your toy.

Creative-thinking skills

There are more good reasons to document the process with photographs and screenshots:

- If something goes wrong, you can easily locate why and when, and can go back and fix it. If the problem is not fixable – for example, you made a beautifully shaped toy but the paint ruins it – you still have evidence of it prior to the painting.
- It is useful if something goes missing.
- If you were to make a variation of your toy, or change small details, having the process documented can help you to make those changes easily.

If you are using any new equipment, or anything that has specific guidelines for safety, try to get someone to photograph you using it. As well as documenting the skills you have learnt, it can help others to use that equipment too.

If something goes wrong when you are creating your toy, and you need to add in additional steps to correct it, you should document this too. For example, if you 3-D print, there may be some excess plastic to remove or, if you are creating a toy with polymer clay, you might need to correct some cracks that occur during the first baking.

When you have your final photographs/screenshots, with any changes documented, you could even upload a real tutorial to a website like **www.instructables.com**

ORIGINS

Kaiju

Kaiju is a genre of film in Japan starring monsters! It is thought to have started with the 1954 *Godzilla* film, but many other monsters are now considered *kaiju*, including Mothra and King Ghidorah. Many of the original mass-produced *kaiju* toys were based on the monsters that appeared in the movies, but the art toy versions are usually a monster of the artist's own creation, with bright colours and a more cartoony style.



Figure 9.2 Vintage *kaiju* toys



Figure 9.3 Modern *kaiju* toys

Sofubi

Sofubi means 'soft vinyl'. These toys were traditionally made by sculpting a small model, from which a metal mould is made. The soft vinyl toy is then cast in the mould. This was a very popular method of manufacturing toys until quicker, cheaper, more reliable methods were developed and this type of toy production stopped. However, this outdated style is being used once again by designers to make small runs of their toys.

Really small runs of individual toys are usually created 100 per cent by the designer, and are made of resin. Big runs are usually created using rotocasting. Creating toys using the *sofubi* method is good for a small run of toys.

Watch the YouTube video 'JAPANESE SOFUBI TOY FACTORY TOUR' to see how these toys are made: **www.youtube.com/watch?v=UoVjU77_Q1s**

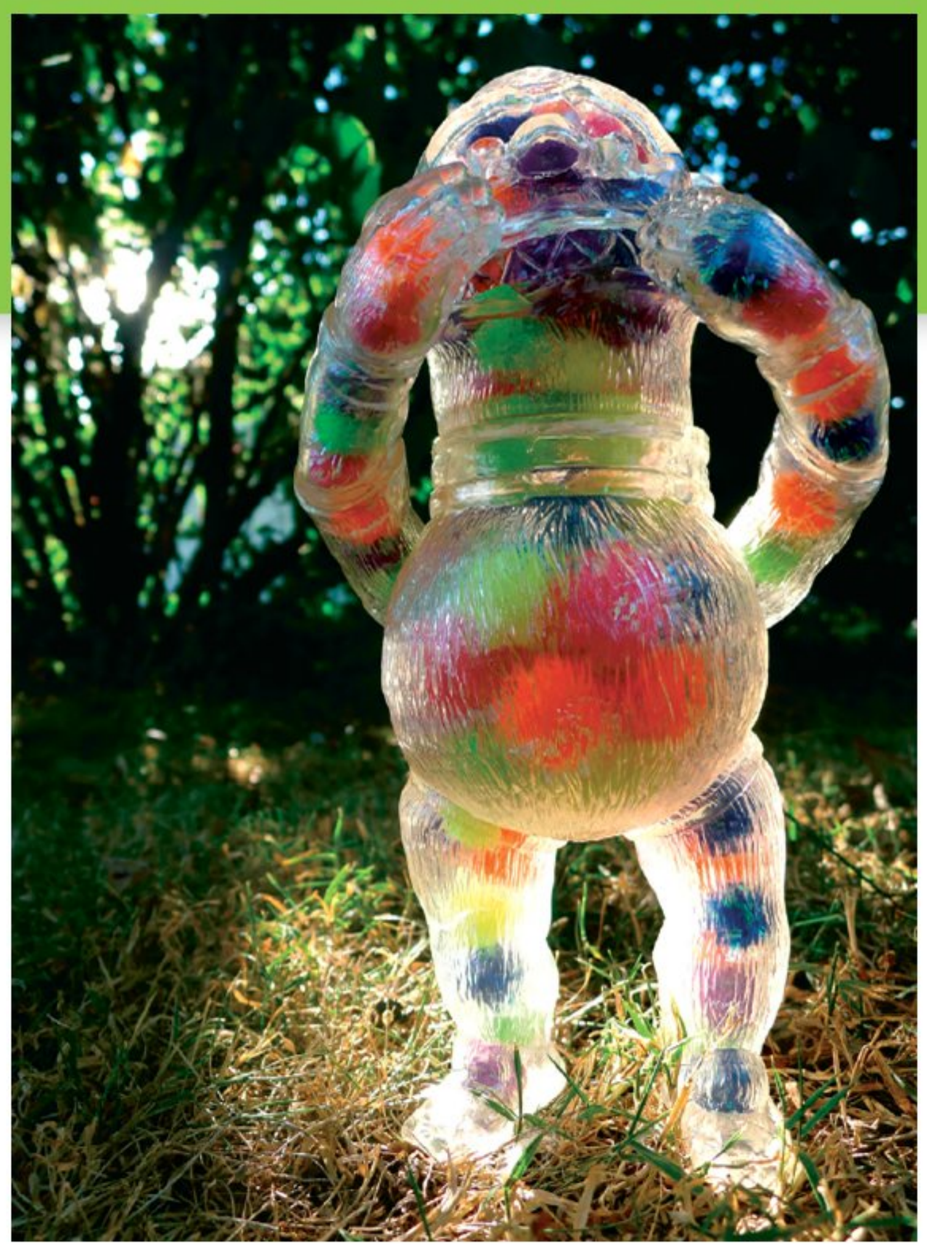


Figure 9.4 A *sofubi* toy made by Grody Shogun

Kinkeshi

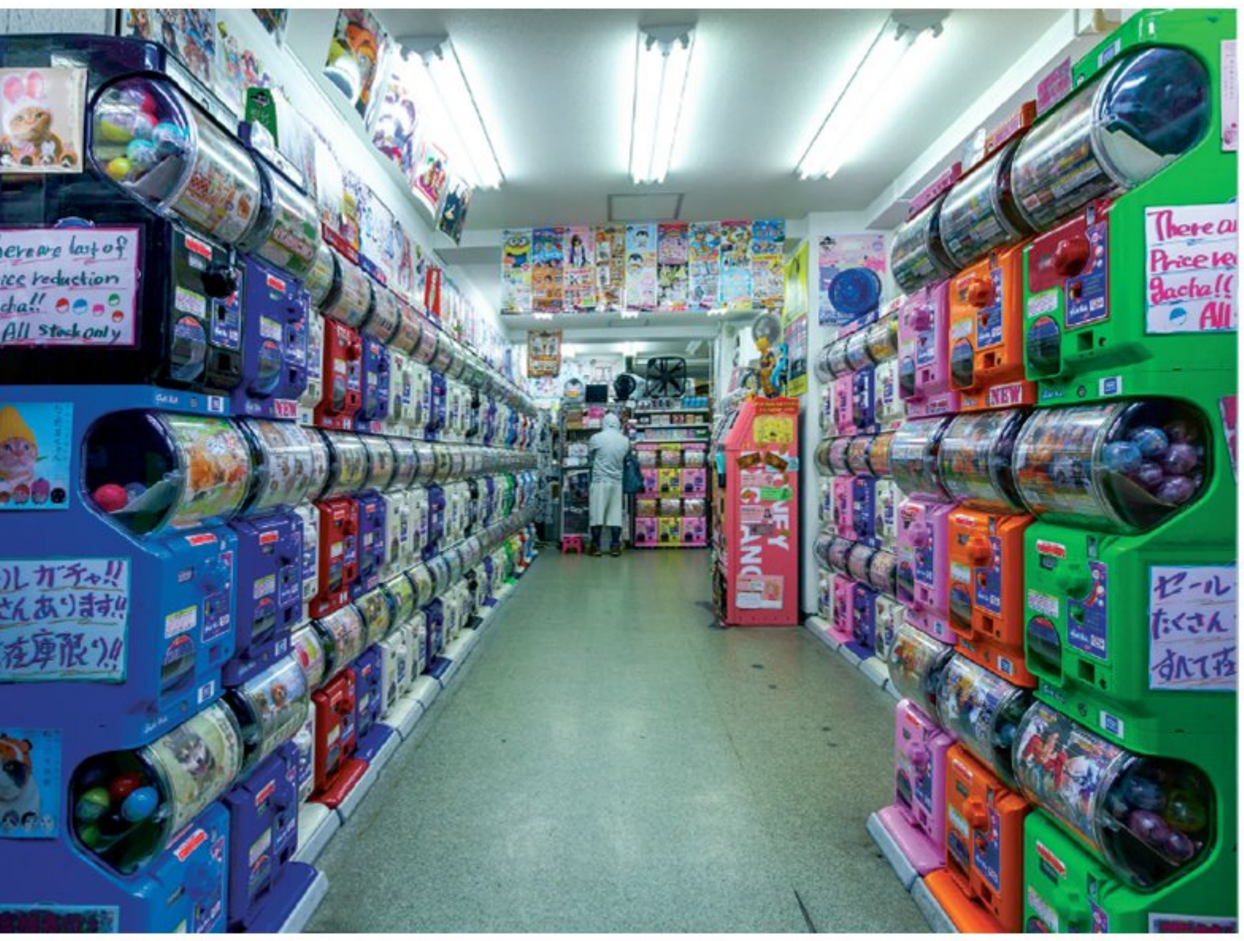
Kinkeshi were collectable toy erasers that launched in Japan in 1983. The original ones were wrestlers and cars. In the USA in 1985 there was a series called M.U.S.C.L.E. that showed muscly men. Each series had well over 100 designs, which made people want to collect them all. They usually came in blister packs with four erasers in each box. They were usually one solid colour, often a beige/pink.



Figure 9.5 American M.U.S.C.L.E. toys

Gashapon or gacha gacha

Gashapon, also known as *gacha gacha pon*, are toy vending machines that are popular in Japan. They were inspired by gumball machines, invented in the USA, but dispense toys, usually in small capsules. There are shops with the machines stacked from floor to ceiling in Japan. These toys are incredibly popular and cover everything from video-game characters through to cute kittens! Although big companies such as Disney and Sega produce toys for them, they have also influenced independent toy designers, who have created small runs of more affordable toys for *gashapon* machines. Medicom Toy collaborates with many designers to create *gacha* toys.



■ **Figure 9.6** Toy vending machine, Japan

DISCUSS

Many children have toys that are special to them and often they can't leave the house without them or sleep without them. Others might own a toy that has been handed down through generations, such as an antique teddy bear or a doll's house. Others just have toys that they have grown out of but have held on to, because they have a special meaning to them.

What toy is important from your childhood? Why?

If you have not kept any toys, find a classmate, teacher or family member who has.

Visit **www.medicomtoy.co.jp** and search 'gacha'.

Learn more by watching PechaKucha presentations by Don 'datadub' Kratzer: **www.pechakucha.com/users/datadub#show**

Look at different toys, from *kaiju* to *gacha*, on the Toy Art Gallery's website: **https://shop.toyartgallery.com**

ART TOY DESIGNERS

Art toy designers have been heavily influenced by Japanese toy culture, including using the same or similar production techniques, style or content. Designers are also influenced by many other parts of popular culture, including cartoons, sci-fi, music and street art, and many pieces are **personified** creatures. Let's look at the work of a few different designers.

MEET THE DESIGNER

Michael Lau

Michael Lau, an artist from Hong Kong, is seen as the founder of the art toy movement. He is influenced by skateboarding, graffiti and hip-hop culture. One of his first exhibitions, in the late 1990s, featured G.I. Joe action figures that had been customized with tattoos and the addition of hip-hop style clothing. His style spread across the internet quickly, leading to a boom in art toys globally, starting mostly in Asia, then the USA.



Figure 9.7 Michael Lau

MEET THE DESIGNER

KAWS

KAWS is probably one of the most well-known toy designers, but he also designs sculptures (some up to ten metres tall), paintings and prints, and has even done fashion collaborations with Uniqlo. Many celebrities own his work, including Pharrell Williams, Drake and PewDiePie.

KAWS is influenced by cartoons, which often feature in his work, including Astro Boy, Tweety and SpongeBob SquarePants. His work has been featured in some of the most notable galleries in the world, including MoMA in New York and the High Museum of Art in Atlanta. One of his paintings recently sold for almost $15 million! His toys can sell for hundreds of thousands of dollars. His work is easily recognizable, as he uses large crosses for eyes.



Figure 9.8 KAWS

Link: **www.artsy.net/collection/kaws-toys**

MEET THE DESIGNER

Jason Freeny

Jason Freeny is an artist known for turning popular toys – including Lego and Barbie – and children's TV characters – such as Tweety, Marvin the Martian and the cast of Sesame Street – into art toys. His style always has half of the character's anatomy on display. He started off by customising existing toys (Dunnys) and still often takes existing toys and carves parts off and sculpts new parts in! He is now one of the most notable and collectable toy designers around.

Watch 'Meet Jason Freeny, Custom Toy Sculptor':
www.youtube.com/watch?v=nWxWyA9Z41E

MEET THE DESIGNER

Luaiso Lopez



Figure 9.9 Luaiso Lopez with one of his custom-made toys

Luaiso Lopez is an artist based in Barcelona, Spain, known for doing incredible, large, one-off pieces. He usually has crosses in the eyes and often a band of colour across them. He often takes on pop-culture figures including Star Wars, Mario and Disney characters.

Luaiso's top tips for designing toys are:

- Ideas can happen anytime, but it helps to be aware of what is around you.
- When looking for ideas, write lots of notes!
- The more inspired you are by a project, the quicker it will be to complete. It usually takes Luaiso one week to create his toys; when he struggles to connect with the idea, it can take a month.
- Always design as if you were the customer. Even if you have a commission that is not your style, try to get as close as possible to something that you would buy.

Luaiso Lopez has an online course, 'Art Toy Creation', on Domestika, which shows his full process: **www.domestika.org**

MEET THE DESIGNER

Jon-Paul Kaiser

Jon-Paul Kaiser is an artist from the UK known for his intricate artwork, which often mimics tattoo styles. He has won several awards, including Artist of the Year at the 2017 Designer Toy Awards. He creates custom figures and small runs, and has worked with bigger companies, such as Kidrobot, to design artwork for their Dunny figures.

'To me, art toys have purpose and a message or narrative; they generally aren't to be played with. They work best as a display or statement piece. Small works of art, snapshots of a story. It's also interesting that often the figures don't come from an established story world or pre-existing intellectual property. They're artistic reinterpretations, births of new narratives and story worlds, or art pieces for the sake of design. Unlike more mainstream toys, articulation takes a backseat in comparison to the overall aesthetic of the figure. Form comes first, and generally functionality is a distant consideration. There's also so much variety, with designers and styles for every taste, and because they are small editions, they can cater for extremely niche interests.'

MEET THE DESIGNER

Super7

One of the most well-known companies around is Super7. They create their own brand of toys but have also been licensed to create toys for Star Wars, Rocky, Alien, Iron Maiden and the Masters of the Universe. The toys cover everything from their favourite movies to their favourite bands, and are reminiscent of the toys the designers played with in their childhood. Super7 has two stores in the USA: one in San Francisco and another in San Diego.

> 'We grew up with giant monsters, comic books, punk, science fiction, skateboarding, robots and rebellion. No one made what we wanted – so we made it ourselves.'

Link: **https://super7.com**

MEET THE DESIGNER

Medicom Toy and Kidrobot

Medicom Toy is a Japanese company that produces and sells art toys. It often collaborates with designers and is well known for its Bearbricks (or Be@rbricks), an easily recognizable bear-shaped toy that comes in various sizes. Medicom Toy has collaborated with hundreds of designers to produce different versions of their toys.

Kidrobot has done something similar with its Dunny figures – rabbit-shaped toys that have been customized in many ways by many different designers.

Smaller Bearbricks and Dunnys are often sold in a series in blind boxes, where you don't know which one you will get until you remove the packaging. You can also buy blank Bearbricks and Dunnys to customize yourself.

Medicom Toy and Kidrobot both make mass-produced toys for bigger companies, such as Disney, but they also work with designers to do smaller runs of collectable toys.



■ **Figure 9.10** Bearbricks

EXTENSION

There are hundreds of different Bearbricks, which are divided into different themes, for example: Basic, Jellybean, Pattern, Flag, Horror, SF (science fiction), Cute, Animal, Artist and Hero (including DC Comics).

Find pictures of Bearbricks and see if you can guess which theme they belong to.

To find out more, search online for the websites of **Medicom Toy**, **Mintyfresh**, **The Toy Chronicle**, **Urban Vinyl Wiki**, **Vinyl-Creep Wiki**, **Rotofugi**, **Red Mutuca Studios** or **Toy Art Gallery**. Scroll through the toys and find ones in a style you like.

Why do 'blind box' editions make toys more desirable?

BLIND BOX

If you buy a Bearbrick from the Andy Warhol series, you won't know which Bearbrick you actually have until you open the box. Blind box series are very popular because collectors want to collect all the toys in the series. The different designs are produced in different amounts, however, meaning that some are rarer, and more collectible, than others.

Art toys handmade by individual artists can cost thousands of pounds, so blind box editions are a much more affordable way for people to add to their collections.

In the 'Exquisite Corpse' Dunny series, the design of the rarest one is kept a mystery (the other designs can be viewed online before you buy one of the blind boxes). The series was designed by artists from Red Mutuca Studios, who are from Mexico, Venezuela, the Philippines, England, Brazil and Germany.

HOW ARE THEY MADE?

Art toys can be made in many ways, but all designers go through a process in which they document and explore ideas, draw their design from multiple angles, and then carefully make a prototype that can be used to create a mould.

Most designers model their prototypes by hand using clay that can be hardened in an oven, such as Sculpey or FIMO. Some designers create their models digitally using CAD software, then create a mould, and some do everything digitally and get someone else to make the mould. The final toys are usually made from resin or vinyl.

Of course, all toy designers are different – some, like Amanda Visell and Andy Rementer, make toys from wood. Many designers just focus on the illustrations/painting, instead of the models, or custom blank toys, while others are commissioned to illustrate existing iconic shapes, such as Bearbricks or Dunnys.

ACTIVITY: Guessing how they are made

ATL

- Creative-thinking skills: Make guesses, ask 'what if' questions and generate testable hypotheses

Pick one image of a toy that you like in this chapter. How do you think it is made? What do you think it is made of? What questions would you like to ask the artist?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Just like MYP Design students, art designers first **inquire** and **analyse**, **develop** ideas, **create** the solution, then **evaluate** their final product.

- **Inquire and analyse:** Designers gather research, often by looking at existing toys.
- **Develop ideas:** Designers sketch many ideas, then develop their chosen idea into more detailed sketches before making them.
- **Creating the solution:** Designers create their prototypes, then their mould, then their toys, before painting them. Creating a toy takes many steps!
- **Evaluating:** Designers might evaluate their toy based on feedback from the company that commissioned them to create the design, from customers, from other designers and even by seeing how quickly their toys sell out.

EXTENSION

To find out more about different ways to create an art toy, look on YouTube, Instructables, MakeZine or Domestika.

WHY COLLECT TOYS?

Collector Kara Mason described stumbling across Dunny while looking at an app she usually used to buy second-hand furniture from. She quickly met the seller and bought nine Dunnys for $15:

> *'I sat in my car, a grown adult, and marvelled at the mini vinyl figures in my hands. I couldn't quite explain it at the time but I fell in love with these tiny creative masterpieces.'*

ACTIVITY: People collect because …

ATL

- Communication skills: Make inferences and draw conclusions

Using the information you have already read in this chapter, write a bullet-point list of all the reasons you think people are motivated to collect art toys. Use quotes and examples from the chapter to **justify** your conclusions.

Mason is now a serious collector who shares her toys with the world on Instagram (kaymaycreates).

> *'Each and every toy has value in its own way. Whether it be sentimental, rarity, or just 'looking cool'. For me personally, I tend to gravitate toward pieces that have nostalgic links to characters I knew and loved growing up. SpongeBob, Mickey Mouse, and Homer Simpson, are just a few iconic characters that are commonly appropriated within the art and toy world. I also love whimsical and playful renditions of otherwise serious characters or artwork, reminding us that you should never take yourself too seriously (WhatsHisName's versions of Jeff Koons' balloon dogs are an astute example).*
>
> *'The most common misunderstanding or question I see from people outside of the art and the collector community is 'WHY'. Why pay for toys? Why collect toys? Why do they matter? In turn I ask you, why does art matter? Why do video games matter? Why do clothes and shoes with any type of design matter? It is, like most art, a form of self-expression. I use these collectible figures to decorate my home, to practise my photography, open conversations between myself and friends, and ultimately to enjoy.'*

For more on the process of designing, sculpting and modelling, see:

- YouTube 'From Sketch to Sculpt: How I Make Toys – Sculpting Action Figures For Resin Casting' by TheCrafsMan SteadyCraftin: **www.youtube.com/watch?v=ycr9bpO-czI**
- YouTube 'Tutorial art toys: toys for big kids' (in Spanish) by Bacánika: **www.youtube.com/watch?v=2GTsL_0r-yg**
- YouTube 'Designing a Vinyl Toy: The Chaos Bunnies' by Joe Ledbetter: **www.youtube.com/watch?v=itN7pRkXAdY**
- Read 'Designing a Vinyl Toy with Joe Ledbetter' on: **https://makezine.com/2014/02/19/designing-a-vinyl-toy-with-joe-ledbetter**
- Domestika: Art Toy Creation – a full course with videos showing every step of the process, from finding ideas to packaging your final product: **www.domestika.org/en/courses/1016-art-toy-creation**

There are also many videos on YouTube showing behind the scenes at *sofubi* factories in Japan.

Design situation

For this design project you can choose one of two situations – either to create a toy for a blind box series or a *gacha* toy.

1 **Blind Box:** A large toy company has asked you to design a toy for one of their new blind box series. You can choose which series from the following: food, horror, sci-fi, *kawaii* (cute), cartoon, anatomy or *kaiju*-inspired. The toy must be no bigger than 3 inches tall.
If you want, you can work with a team of classmates to each make a toy for the same series. You can also choose to design the packaging for the box. The focus for a blind box toy is mostly on how it is painted. You might even choose to use an existing shape. For this project, you will produce one copy of your toy.

2 **Gacha:** You are designing a small *gacha* toy that must fit into a 2-inch capsule. You can choose which series from the following: food, horror, sci-fi, *kawaii* (cute), cartoon, anatomy or *kaiju*-inspired.
The focus on *gacha* toys is the shape, as they are usually not painted or only have a little detail added, such as the character's eyes. You might make several copies of your toy. You might even want to look online to see if you can buy capsules to put your toy in.

ACTIVITY: Inspiration from existing toys

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

One of the first things you should do is gather existing toys that you like, which might inspire you. Create a document where you can gather images (you could use Pinterest, Padlet or Jamboard). You might make separate documents, or mood boards, to show different styles, colours or the work of different artists. Annotate the images to **describe** their aesthetic, what you like about them, their size and what they are made of.

Hint

When you look at art toys online, they usually have the size and material listed in the description.

Regardless of the design situation you have chosen, you should research different designers. If you are going to create a blind box toy, you should **analyse** a few different blind box collections. If you are making a *gacha* toy, research existing *gachas*. These toys come in many different styles – try to find toys that you like!

Use the following to help you search:

- **Designers: (you might need to add 'toy' to your search) Add Fuel, Amos, Andy Rementer, Amanda Visell, Bwana Spoons, Carlos-Enriquez-Gonzalez, Daniel Goffin, El Grand Chamaco, Frank Kozik, Gary Ham, Gary Baseman, Guggimon, Jeff Lamm, Joe Ledbetter, Julie West, Linda Panda, Luke Chueh, Martin Ontiveros, Pete Fowler, Ron English, Takashi Murakami and Tim Bishop.**
- **Blind box: Kidrobot blind box, Medicom Toy blind box, Tokidoki blind box, Dunny blind box, Bearbrick blind box, Janky blind box, Konatsuya blind box and Sonny Angel blind box. On Kidrobot's website you can browse by artist or you can look through their blind box collections: www.kidrobot.com/collections/blind-box**
- **Gacha: designers and companies making *gacha* toys (you might need to add 'gacha' to your search) include: Art Junkie, Bridge Ship House, Candie Bolton, Cojika Toys, Ilu Ilu, Instinctoy, Jetture, Kaori Hin, Paul Kiaju, Pushead and Scartula.**

Assessment opportunities

- This activity can be assessed using Criterion A: Developing Ideas (iii).

ACTIVITY: Listing your ideas

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Before you start drawing you need to decide what character you will make and what the character is doing. Remember that the focus of the chapter is on making playful objects, so make sure your ideas are fun! Create a mind map and try to fill it with as many ideas as possible. Your list should include the physical objects/person/animal, what they are doing, and any additional objects. There are many websites that allow you to create digital mind maps for free, such as **www.mindmeister.com**. A benefit of doing this online is that you can move ideas around and you will not run out of space.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).



Figure 9.11 Mind maps are a great way of organizing your thinking

DISCUSS

Which of the toy design situations will you pick and why? Share your thoughts with a classmate and jot down your reasons.

You might find inspiration from something not connected to the art toy world at all. You might be inspired by other elements of pop culture, the things around you or even classical art.

EXTENSION

Many toy designers are happy for you to reach out to them to ask questions. You could interview them for this project or even share your finished work with your favourite designer.

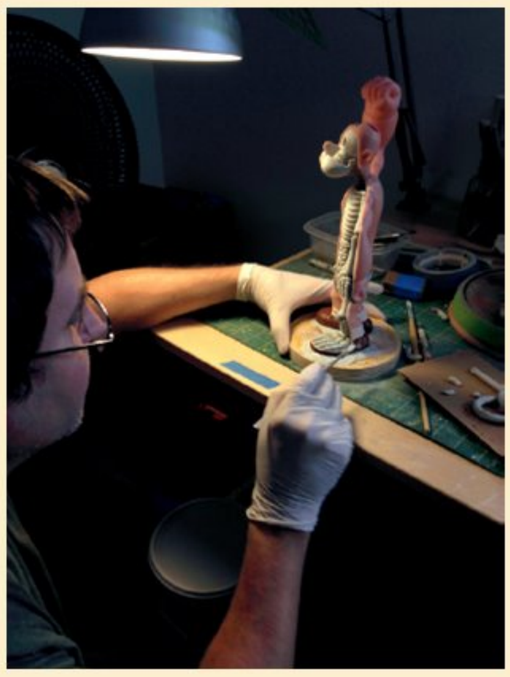
The designer Emergency Toys describes their influences as follows:

> *'I like vintage toys from Japan and Europe, but I also like classic sculpture like baroque sculpture from the fifteenth century, especially German sculptors. I like contemporary art too. My favourite designers are Jim Henson and Spike Jonze. I also really like the Hong Kong primitive art toy scene like Eric So and Michael Lau; their influence is very important!'*

How can a designer make an object which communicates a sense of playfulness?

It is important to get feedback on your initial ideas and sketches before you commit to making your final toy. You might find out that your favourite idea is not the most popular among your target audience. Chat with your classmates and look at each other's sketches. Give each other constructive feedback. This means don't just say what is wrong, but instead say how you think they might be able to improve it.

An interview with Jason Freeny





■ **Figure 9.12** Jason Freeny

Can you describe the style of toys you make? The beauty of designer toys is that they are a personal expression from the designer. Each designer puts out a very personal representation of themselves and their design style. Years before I had any toys produced, I was creating my own artwork depicting a robot and his pet balloon dog as if they were living creatures. Knowing that all living things are the shape they are because of their inner anatomy triggered the curiosity of what bizarre skeleton would be found inside a balloon animal that would give them their shape … The illustration I created for the concept would go on to be one of my first toys. From the popularity of that piece I expanded on the character anatomy concept and now have hundreds of licensed anatomical toys.

As far as my 'style' goes, I would say there is a running theme in my work imagining inanimate objects as living beings. Questions like 'What would the fetal development of a gummy bear look like?' and 'Would a marshmallow be a cannibal at a campfire?' I also like to experiment with objects and their perceived materials, such as melting metals. It's safe to say I like some good irony in my creations.

Can you describe your design process, from initial idea to final design? Every artist develops their own process catered to what works for them, but every design begins with an idea. Early in my career the traditional process of sketching your ideas out on paper first and then moving into the sculpting was my go-to method. As I have honed my process over many years, I have found that my mind thinks more clearly in 3-D than 2-D drawing. I usually come up with a concept in my head and then make a very quick sketch in my sketchbook. This drawing is more to save/record the idea than it is to work out any design. I have books of ideas that I jot down and these are great to go back to when I want to create a new piece. Not all my ideas pass the test to commit to sculpting, but ideas sprout new ideas, and sometimes an old mediocre idea will spawn a new amazing idea.

Before I jump into sculpting, I will spend days, sometimes a week or more, running the sculpting process through my head for that individual piece. I try to imagine what issues I will run into beforehand so I can plan around them. Sometimes this process spawns new, better ideas that alter my original design – these are those 'Eureka!' moments that really excite. Once I am at this point, I dive head first into sculpting. My mind really works best creating in 3-D, which has almost eliminated the drawing process from my work; that is not to say I won't work something out on paper from time to time – design is a very fluid process.

The sculpting process is pretty cut and dry from this point. Sculpt the forms, sand them, prime them and then paint. I use a two-part epoxy clay to sculpt. It feels a bit like chewing gum when sculpting but it hardens to a plastic/ceramic-like texture. I paint using water-based acrylics sent through an airbrush or hand paint with a synthetic brush.

What tips do you have for someone wanting to start designing toys? It's difficult to separate the two, but designer toys are very much about personal expression. Take the time to develop your ideas; the best designs are smart designs. Don't be afraid to explore multiple options and let go of work that doesn't live up to its expectations. Ignore what 'everyone else is doing' and concentrate on your own uniqueness. Original ideas are what float to the top.

ACTIVITY: Get sketching

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

When you know what type of character you are going to create and what it will be doing, whether it's a spoiled kitty cat losing a beauty pageant or a dinosaur eating pizza, you now need to start visualizing how it will look.

Try to fill your process journal pages with many different ideas for your character. Think about each element of the character – for example the eyes, the nose and the mouth – then draw variations of each of these. If you are drawing the eyes, try drawing them big, small, close together, far apart, long, round, triangular … try as many different styles of each feature as possible to create many initial ideas. You can then circle your favourites and ask your classmates for feedback on them.

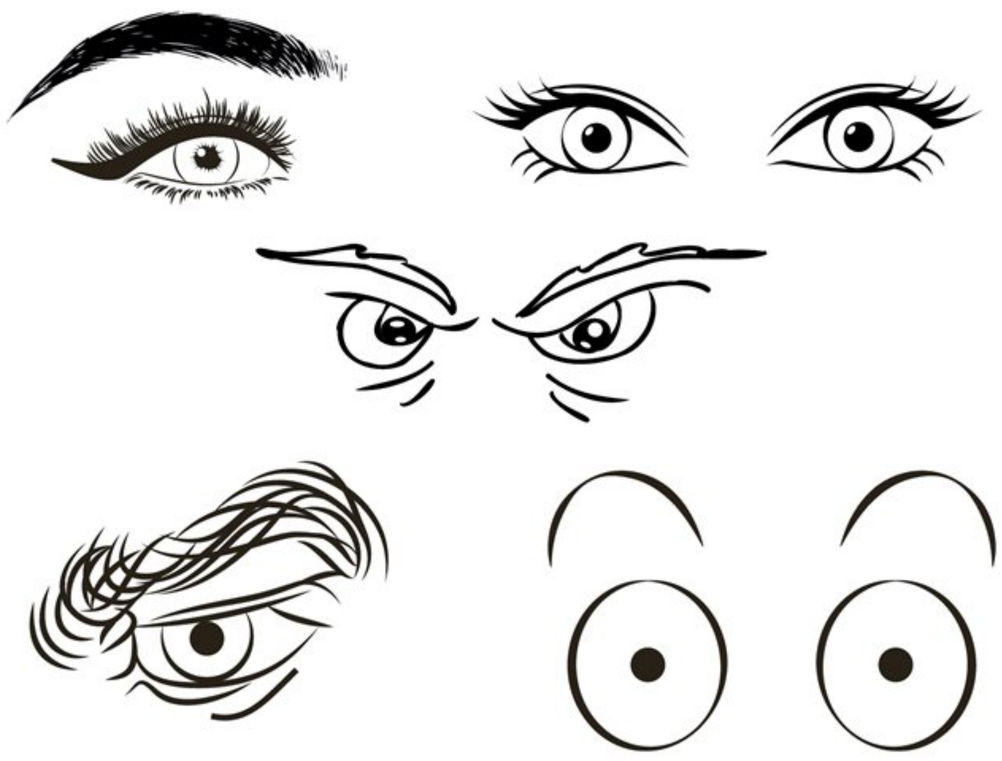


Figure 9.13 Different styles for sketching eyes

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).

There are many fantastic video tutorials on YouTube as well as full courses online, for example on Udemy, which can help you to develop characters. A useful one to watch is 'How to Create Characters (the Design Process)' by Jazza on YouTube: **www.youtube.com/watch?v=Rpj2J4tn4YI**

The designer Emergency Toys says that they sketch their initial ideas while riding the Metro in Paris on the way to work. They just speed through to make rough ideas, and that ideas come to them when they move (like on the Metro) or when they sleep!

Chinese toy designer Han Ning, part of the duo that makes up the art toy brand AICHIAILE, started off by making his first art toy in 2015, called Space Boy. This included the main character along with a small rocket and a small space dog called Pizza. After the release, many people contacted the designer about the dog. He was surprised, as it was supposed to be a sidekick, with Space Boy being the main character. Although the original dog could only be bought as part of a set, in 2016 Han Ning decided (based on feedback) to create three separate editions of the dog: Da Wang, Qiuqiu and Xiao Tian. They now have 22 different editions, in different sizes, made of both resin and vinyl.

Should all toys be played with?

PRACTICE MAKES PERFECT

When you create your detailed sketch of your final toy, you will have to sketch it from multiple angles. You should sketch it from the front, back and at least one side (if both sides are exactly same, then just do one). This will help you to properly formulate the toy in your mind and when you come to create it. This is also a great skill to have if someone else were to make your final product (for example, if you were a real toy designer and a factory was going to make your finished toy for you). Practise by finding a toy in your home, preferably a figure, and sketch it from all angles.

If you do not have a toy in your house, try drawing one from this book, imagining what the hidden sides look like.

Japanese artist RAGE, who runs the brand Grape Brain, says that ideas pop into their head and are fully developed in their head before they commit anything to paper. Before they begin designing the toy, they draw an illustration that shows the finished design. RAGE says that character design for toys and illustrations is very similar, and both are important. After developing the character as an illustration, they draw a blueprint for the toy and draw their idea from all four sides. They then have someone else create the prototype, which they send to a factory to make a mould.

Chinese toy designer Han Ning started off as an artist using oil paints but said: 'Sometimes, I would make some small works with plasticine to amuse myself, which was also a way to relieve pressure on myself.'

ACTIVITY: Sketching your idea

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

It is time to sketch your idea. If you are struggling to imagine what all four sides will look like, take a lump of clay or plasticine and mould it into the rough shape you want. This will help you when you draw it from all four angles. You could also create a paper version of your toy to help you understand how it looks in 3-D. For this you can either try to make a full paper version, or you can make a paper cube and draw the toy on each side of the cube from different views.

Add annotations to your sketches to help someone else fully understand the toy. It would help to colour in the drawing too. If a factory was going to make your model, they might request Pantone colours (colour codes that stand for a specific shade). You can find Pantone colours online here: **www.pantone.com/color-finder**

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iv).

An interview with Jon-Paul Kaiser

There are many different ways to create a toy. Artist Jon-Paul Kaiser explains his process.

Jon-Paul Kaiser: The process varies depending on the production type; is it a small resin release that I'll be taking on personally, or is it a larger production run in vinyl for a larger company like Kidrobot? If it's a small run of resin figures, I can be quite dynamic; working the initial sketch into a 3-D turnaround drawing; showing the front, sides and back. It's then sculpted by myself and

ACTIVITY: Making your toy

ATL

- Creative-thinking skills: Create original works and ideas; use existing works and ideas in new ways



Figure 9.14 3-D printed toys

Just like in the art toy world, there are many options for making your toy. In a school setting, these might depend on the resources and time available to you. Some options might include:

- **using a 3-D printer**
- **sculpting out of a polymer clay**
- **using wood**
- **sewing with a machine or by hand**
- **creating a mould of your toy and making a final version from resin.**

If you have limited access to physical resources, you could make a 3-D design on a computer instead, using free software such as Tinkercad or Fusion 360 (free educational licences are available).

Before you start making, **list** each step, including the tools, material and time needed. If you are working digitally, make sure you use the right names for the digital key. Here you can imagine that you are sending your instructions to a factory or other producer to make your toy – make sure they are clear enough for someone else to be able to make your product without you being there to guide them.

You will have to make predictions for the time that some of the steps will take, for example how long the paint will take to dry. For other steps, such as 3-D printing or letting resin dry, you should be able to find out exactly how long it will take (using your computer software for the 3-D model, or reading the resin label, for example). One of the steps that might take you the longest is painting, especially if you have to wait for individual layers to dry or if you have to redo part of the paintwork.

Before you begin making your plan, work out exactly how many more classes you have left, including the dates, and the time available. Use this in your instructions, but remember to allow flexible time for things like arriving to class, listening to teacher announcements and even tidying up.

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (i).

sent off to a friend to make moulds and cast it in resin. The casts can then be painted and a whole project could be turned around in as little as two months.

For something more commercial, there's often a brief as well as budgetary and form restrictions. If it's part of a Dunny series, for example, there will most likely be a series theme to work to. Initial brainstorming and sketches get refined and sent through to Kidrobot for feedback. These concepts are a delicate compromise between the artist's vision, retaining the silhouette of the established figure or character, and the cost restraints. Companies will give feedback on the design, as well as any accessories, extra sculpting, etc. This is then refined and a 3-D plan of the figure is drawn up digitally (on Illustrator). This will include all angles of the figure, displaying the sculpt front, back, sides, top and bottom. Then there's an extra set of plans showing the print application and positioning of the figure. Finally, there's the print colour palette, displaying the desired inks, sprays or other application techniques.

A digital model is then rendered and, if approved, we move into print samples and then packaging design. Illustrating the container the figure will come in/be displayed in can be one of the most fun aspects of the design as there are a few considerations; you can really go to town – add in Easter eggs, hidden jokes, etc.

For me, this whole process takes between eight months and two years.

Can toys be art?



Figure 9.15 Emergency Toys

The Parisian designer Emergency Toys has a similar method. After their initial sketches, they create a 3-D digital model. They like to be able to work quickly as they get bored easily. They find they can make very clean work with the digital sculpt, with perfect symmetry, which is hard to do by hand. The next step is to 3-D print the model, which is then sanded to become a clean prototype. The more complex toys have more parts to them, but this also means they are more expensive. Each part is painted separately.

With the prototype, a metal mould is made by another manufacturer, into which very hot plastic is then injected. The first models are sent back to Emergency Toys, who can then paint them to find the perfect colourway. Once the colours are decided, the packaging is designed – one of Emergency Toys' favourite steps! The final toys are made by the factory.

To see some beautifully photographed toys, simply check out the work of Luaiso Lopez. In his online course on the website Domestika, he talks about the importance of taking professional photographs – there is no point spending hours making a beautiful toy then not showing how much work and effort has gone into the process.

ACTIVITY: Photographing your toy

To show your finished toy at its best, you need to take some high-quality photographs. When photographing your toy, make sure it is well lit.

If you want to have a plain background you can copy a professional set-up, as seen in Figure 9.16, by using a large piece of paper with no creases, and having it curve against a wall or chair, and then pointing a desk lamp at your work.

You can be more creative and try different backgrounds, such as fabrics or a natural scene; if you do this, you should try to keep mainly the toy in focus, with the background blurred. This is called having a 'shallow depth of field'. Some apps have a similar feature, such as Instagram's 'tilt shift' and PicMonkey's 'soften'. You must make sure the toy is the focus of the image, so that the viewer looks straight at it! Try not to have a busy background as it will distract from your work!



Figure 9.16 This toy was photographed on a curved background



Figure 9.17 This toy was photographed with an aluminium/tin foil background, and with a shallow depth of field



Figure 9.18 This toy was photographed outside, but the background is blurred so as not to distract

ACTIVITY: Evaluating your project

ATL

- Critical-thinking skills: Gather and organize relevant information to formulate an argument

For this project you may have created specifications that you can use to **evaluate** your final toy against, but let's think about how we can assess your toy in relation to the statement of inquiry: 'Some objects have no other function than to delight.' You can look at your toy and personally think it is delightful, but how can you prove it? If you are just looking at your opinion, it may be argued that your evaluation was too subjective. You should try to design testing methods that will prove that it is delightful.

Here are some ideas:

- **You could ask people to look at your toy then pick a few words from a list of words provided. You will aim to get a high percentage of people saying 'delightful' (or synonyms for delightful).**
- **You can ask people to describe your final toy in three words, then analyse the collection of words to see if they match with delight. You could even make a word cloud of the responses.**
- **You could ask people how they feel when looking at your toy and give them a scale to choose from, for example zero is bored and ten is delighted.**

You can use this data as proof. You might not be able to prove that your objective is delightful, but you can prove that X number of people think it is! You could say that '90 per cent of people surveyed said my object makes them feel joy or glee (synonyms for delight), therefore my project succeeded in making my audience members feel delight!'

As well as outlining the success of your toy, you should also suggest ways that it could be improved.

Hint

You can also use the word 'playful', as we are trying to delight people through making a playful object. You could use a thesaurus to list all the words that also mean, or are similar to, delight. If you are using similar words to 'delight', you should also use words that mean the opposite (antonyms).

EXPERT APPRAISAL

As a class, you could put together a display of your work on a slide deck or website. Your teacher could then share it on an art toy forum, with collectors, shop owners or even with some of your favourite toy designers. Remember, if you are sharing work digitally online, try to find a way of recording who has seen it and make sure you gather feedback. This could be by providing a feedback form, a place to write comments or even a simple 'liking' feature.

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (i, ii and iii).

EXTENSION

If you have enjoyed this chapter, think about ways you could continue making toys. Next time try to make it bigger and better, or even try to use a new technique.

If you are now interested in art toys, you could start a collection, visit an art toy shop, or perhaps go to a convention.

Take action

- Consider auctioning off your toys for a child-focused/play-based charity. If your class all made *gachas*, maybe your school could hire or even invest in a gumball/*gacha* machine and raise money that way too. You could also have an exhibition of your work.

Reflection

In this chapter you may have reconsidered your definition of the words ‘toy’ and ‘play’. You have been exposed to the world of art toys and have had the chance to make your own.

As a designer we often make products that have a direct impact on improving the world around us. Through making art toys, objects that people merely look at and don’t interact with, you are able to bring joy into people’s lives. Other designers may do this by creating other beautiful items, such as cars and clothes, but remember that there are many ways designers can make the world a better place.

Use this table to evaluate and reflect on your own learning in this chapter.						
Questions we asked	**Answers we found**	**Any further questions now?**				
Factual: What toys do people collect? Who collects toys? What is the role of toys in Japanese culture?						
Conceptual: What makes something cool? Why do ‘blind box’ editions make toys more desirable? How can a designer make an object that communicates a sense of playfulness?						
Debatable: Should all toys be played with? Can toys be art?						
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**				
		Novice	**Learner**	**Practitioner**	**Expert**	
Communication skills						
Creative-thinking skills						
Critical-thinking skills						
Learner profile attribute	Reflect on the importance of being open-minded for your learning in this chapter.					
Open-minded						

10 How can designers help us not forget the past?

SENSITIVE CONTENT: You should note that some works covered in this chapter include sensitive content and links to external webpages that contain potentially upsetting content and images.

Memorials/monuments exist to **communicate** important **messages** so that we do not repeat **past mistakes**.



■ **Figure 10.1** George Floyd memorial, USA, and Children's Peace Monument in Hiroshima, Japan

CONSIDER THESE QUESTIONS:

Factual: Who is represented in memorials/monuments? Who is not represented?

Conceptual: How can a designer shape the way their target audience feels about their work?

Debatable: Should we be passive when interacting with memorials/monuments? Should we just forget the past and move on?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

memorial monument

IN THIS CHAPTER WE WILL …

- **Find out** how monuments help us to remember the past.
- **Explore** examples of many different monuments.
- **Take action** by designing your own monument.

We will reflect on this learner profile attribute …

- Knowledgeable – we will use our knowledge from other disciplines, along with issues and ideas of local and global significance, to support our design.



These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

Different types of designers use transfer skills all the time, and are mostly specialists in at least two disciplines. If you are a sportswear designer, you will also know about sports and fashion. If you are a roller coaster designer, you will also know a lot about physics and engineering. If you are a memorial/monument designer, you will also know a lot about history.

In this chapter you will be transferring knowledge that you may have learnt from Individuals and societies classes, books and documentaries into your work, as you will have to be knowledgeable about the event or person you will be commemorating.

Designing a monument is a big responsibility, as you are creating something that has a lot of meaning to many people and usually carries an important message. Designers have to think about how they want people to feel when they are visiting their monument. In this chapter we will be designing our own models for monuments/memorials.

To help you with this chapter, you might also use collaboration skills – collaborating with your Individuals and societies teacher, a local museum educator or another knowledgeable person. You will also use research skills so that you know a lot about the topic or person you are commemorating.

ACTIVITY: Different designers

ATL

- Transfer skills: Make connections between subject groups and disciplines

Think about the following types of designers – apart from design, what other subjects might be useful to them:

- **architect**
- **graphic designer**
- **car designer.**

Who is represented in memorials/monuments? Who is not represented?

Monuments are structures (usually statues, plinths or buildings) that commemorate a notable event, person or group of people. While monuments might be there to celebrate or reflect on an event, a memorial is a type of monument made to commemorate a sadder event in history, usually where a person or people have died.

You probably have many monuments where you live, some that you will be aware of and some that you barely notice. You may also have visited them on vacations or learnt about some in your Individuals and societies classes.

DISCUSS

Which monuments/memorials have you visited? What or who did they commemorate? What did they look like? Did they have an impact on you?

EXISTING MONUMENTS

SENSITIVE CONTENT: You should note that some of the images in this section may include sensitive content and refer to potentially upsetting historical events.



Figure 10.2 The *Korean War Veterans Memorial* in Washington D.C., USA, memorializing the Americans who served in the Korean War



Figure 10.3 *Shoes on the Danube Bank* is a memorial to commemorate the Jewish people killed in Budapest, Hungary, during the Second World War; they were told to remove their shoes, before being shot, so that their bodies would fall into the river below



Figure 10.4 The *Famine Memorial* in Dublin, Ireland, which commemorates the Great Famine during the nineteenth century



Figure 10.5 People look up at the *Atocha Memorial*, which commemorates the victims of the 2004 Madrid train bombings in Spain

SENSITIVE CONTENT: You should note that some of the images in this section may include sensitive content and refer to potentially upsetting historical events.



Figure 10.6 The *Aboriginal Memorial* represents all the indigenous people who have died defending their land since 1788; the path through the middle mirrors the Glyde River, which many aboriginal Australians live close to; the different painting styles represent different clans



Figure 10.7 Marks left in the ground from mortar fire in Sarajevo, Bosnia, have been filled in with red resin; they are now called *Sarajevo Roses*



Figure 10.8 Robben Island, South Africa, is a former prison turned memorial and living museum; it was used from the seventeenth century until the end of apartheid, in 1996; Nelson Mandela was imprisoned there

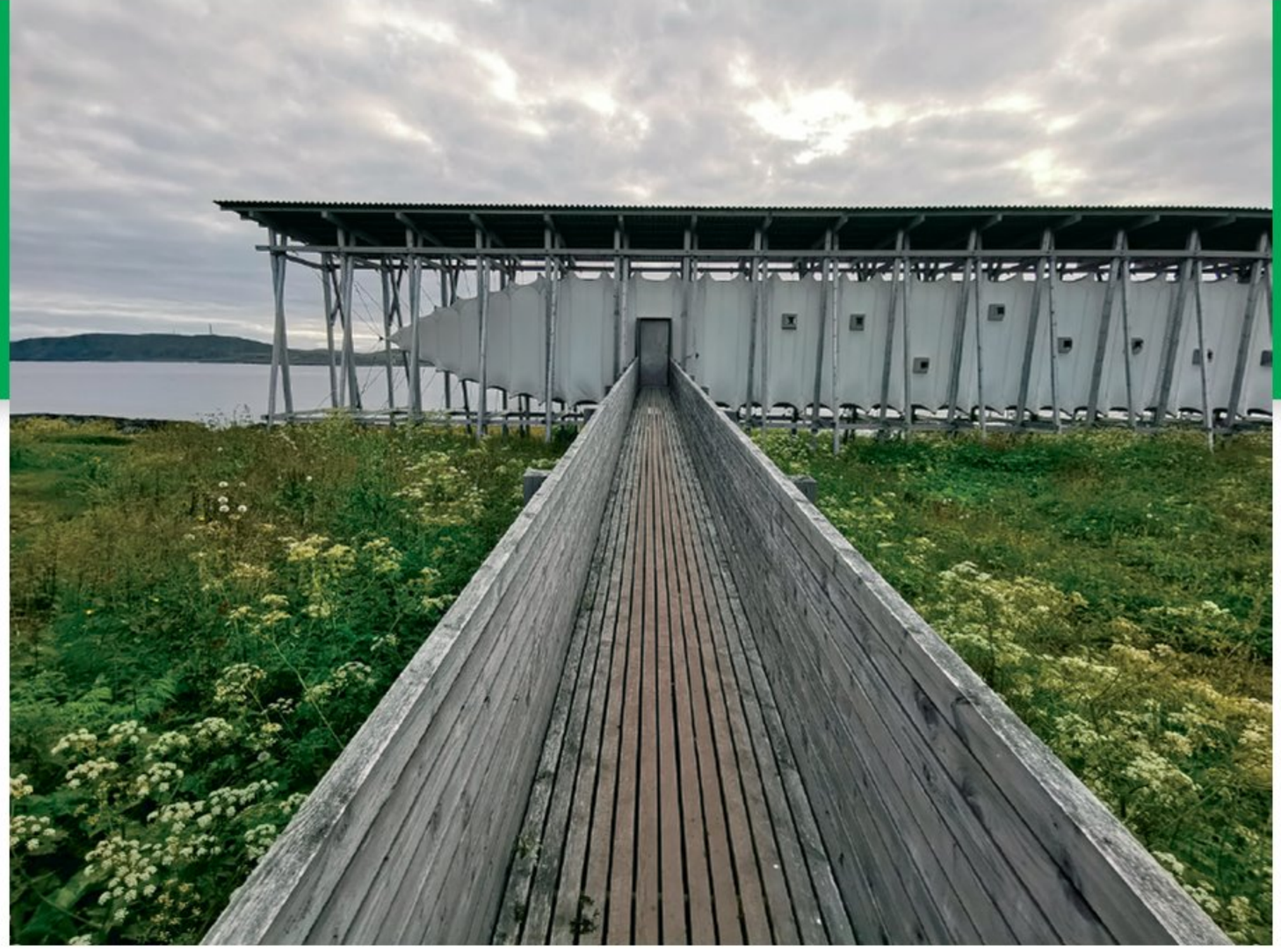


Figure 10.9 Steilneset Memorial, Norway, commemorates the execution of 91 people for witchcraft in 1621



Figure 10.10 *Raj Ghat* is a monument dedicated to Mahatma Gandhi in Delhi, India; it is made from black marble and has an eternal flame at the centre; people often decorate the monument with flowers



Figure 10.11 *Stolperstein* are small brass plates inscribed with the names of people who were killed by the Nazis, along with their dates of birth and death; they are placed on pathways in front of where the people lived or worked, and can be found in many countries including Germany, Poland, France and the Netherlands

How can a designer shape the way their target audience feels about their work?



Figure 10.12 To mark 100 years since the end of the First World War, the moat of the Tower of London was filled with commemorative ceramic poppies; the installation was called *Blood Swept Lands and Seas of Red* and was made by Paul Cummins and Tom Piper; thousands of volunteers helped to place the poppies, each of which represented someone who died during the war; when the display was taken down the poppies were sold for £25 each, raising money for various veterans charities

DISCUSS

- **What impact do Figures 10.2 to 10.11 have on you?**
- **Would the impact be different if you were at the monument/memorial?**
- **Is the impact related to how recent the event is or not?**
- **Is the impact related to how geographically close the event is or not?**
- **Is the impact related to how you identify with the people commemorated by the monument/memorial?**
- **How might the scale of the monument change the impact it has on you?**

Pick one of the images and find out a little more about the events or person that it commemorates, then discuss:

- **How could knowing more about the event/person change the impact?**
- **How might someone with a personal connection to the event/person be impacted?**
- **How might someone with a personal connection to the event/person feel when visiting the monument/memorial?**

EXTENSION

Find more monuments and memorials by searching: **MoMA – The Modern Monument**, **Oosterpark** in Amsterdam, **Fallen Monument Park** in Moscow, **Soviet War Memorial** (Treptower Park) in Berlin, **Skulpturenpark Waldfrieden** in Germany, or **Washington DC memorials**. You can also search on Atlas Obscura or Google Arts & Culture.

In Britain, the red poppy is synonymous with remembering victims of war, as poppies grew in the battlefields of Belgium and France after the First World War. Different flowers symbolize the same thing in different countries – in France they have the cornflower, Belgians have a daisy, and Germans use forget-me-nots.

TEMPORARY MONUMENTS

Monuments are usually made from long-lasting materials, such as metals and concrete, and are built to last for generations, the thought being that these permanent structures will help us not to forget the people and places they commemorate. Sadly, some are destroyed or deteriorate for many reasons, such as damage by war or a lack of funding to maintain them. The UN maintains the List of World Heritage in Danger, which includes many monuments and memorials.

However, sometimes monuments are intentionally temporary. Temporary monuments are often interactive, and usually get a lot of press, allowing them to raise awareness among people who are not physically at the monument. Temporary monuments are often created to mark an important anniversary.

Watch the 2014 poppy installation at the Tower of London for the 100-year anniversary of the start of the First World War: **https://vimeo.com/102652713**

Should we be passive when interacting with memorials/monuments?



Figure 10.13 *The Fallen* represented the 9000 people who died on the beaches of Normandy on D-Day in 1944; this temporary tribute was made using large stencils and rakes to show the silhouettes of fallen soldiers; as the tide came in, the shapes were washed away; it was displayed on 21 September 2013, International Peace Day

Watch The Fallen | Lest we Forget - A temporary memorial, shown on International Peace Day, on the Normandy beaches:
https://vimeo.com/97488887

THINK–PAIR–SHARE

Why do you think some designers choose to create memorials that will only last for a short time?

EXTENSION

Read about a new competition for interactive, temporary memorials in Washington D.C.:
https://archpaper.com/2016/04/a-new-competition-for-interactive-temporary-memorials-in-washington-d-c

Mount Bosiu – Lesotho's national monument – goes interactive:
www.youtube.com/watch?v=VGf7wdPaVfo

SENSITIVE CONTENT: You should note that this link contains sensitive content and upsetting images.

Read 'Yolocaust': How should you behave at a Holocaust memorial?:
www.bbc.com/news/world-europe-38675835

EXTENSION

Ask an adult family member or teacher which monuments they have visited, how they felt and why.



Figure 10.14 *Homomonument* in the Netherlands commemorates homosexuals who died in the Second World War; the triangle shape matches up with the pink triangles homosexuals were forced to wear on their clothing; each point of the triangles points somewhere significant – towards Anne Frank's home, towards the National War Memorial and towards COC Nederland's headquarters (a Dutch LGBT organization)

HOW DO WE BEHAVE AROUND MONUMENTS?

Most monuments are there to help you remember or reflect on an event in history. When visiting you will find people are usually quiet, moving slowly, and spending time in their own thoughts. However, we are supposed to behave differently around some monuments. The Diana Memorial Fountain and playground, both in Hyde Park London, were designed to reflect her love of children, and are supposed to be fun, playful, interactive spaces.

Winston Churchill, the former prime minister of the UK, is usually celebrated as a leader who led the UK and its allies to victory in the Second World War. He was also known for prison reform, delivering powerful speeches, writing many books, and winning the Nobel Prize for Literature in 1953. However, if you dig a bit deeper, you will find him to be a controversial character with questionable views on race. His actions impacted many people negatively, including describing Indians as 'a beastly people with a beastly religion', describing Chinese people as 'people with slit eyes and pigtails', and refusing to send relief aid during the Bengal Famine, when up to 3 million people died.

During Black Lives Matter protests in 2020, Winston Churchill's statue, outside the Houses of Parliament in London, was vandalized. Many people have called for this statue to be removed.



Figure 10.15 Winston Churchill

EXTENSION

See what you can find out about the engraving on the side of Stone Mountain in Georgia in the USA. Who is the engraving of? Do you think they should be celebrated or do you think the engraving should be removed? Many people in Georgia want OutKast to replace the current engraving – who are they and why are they important to Georgians? Do you think they should replace the original engraving? Who else could replace the current monument?

ACTIVITY: Who was Winston Churchill?

ATL

- Information literacy skills: Access information to be informed and inform others

Do some quick reading online to see what else you can find out about Winston Churchill.

Search for images of his statue being vandalized. Do you think his statue should be removed or protected? Why?

Have you heard about any other statues being removed, vandalized or protested against? What do you know about these statues?

Maybe you will decide to design a new monument or memorial for Winston Churchill, or for the people he has affected. If so, you can use this research to help you.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

Resources include:

- Wikipedia – Racial views of Winston Churchill: **https://en.wikipedia.org/wiki/Racial_views_of_Winston_Churchill**
- The *Independent* – 'Not his finest hour: The dark side of Winston Churchill': **www.independent.co.uk/news/uk/politics/not-his-finest-hour-the-dark-side-of-winston-churchill-2118317.html**
- YouTube – 'Winston Churchill: Hero or villain?' (BBC News): **www.youtube.com/watch?v=cIZiSYx1pKE**
- CNN – 'Yes, Churchill was a racist. It's time to break free of his 'great white men' view of history': **https://edition.cnn.com/2020/06/10/opinions/churchill-racist-great-white-men-view-toye-opinion/index.html**

Should we just forget the past and move on?

WHO IS REMEMBERED?

If we look at monuments created for events before the First World War, they usually show the leaders of battles, such as famous army generals and politicians. After the two world wars, monuments started to represent all the different people that were impacted.

After the Second World War, many monuments emerged to commemorate the Jewish people killed by the Nazis in the Holocaust. In more recent years monuments have been created to commemorate other groups of people who were killed in the Holocaust, including disabled people, the Roma people, Jehovah's witnesses, and those with opposing political beliefs.

It is only in later years that monuments have emerged to commemorate homosexuals who died in the war – in places like the UK, the USA and other parts of the world – because homosexuality was previously criminalized. There are still many parts of the world where homosexuality has not been decriminalized, however, so you will not find a monument there.

In London, the *Animals in War Memorial* was unveiled in 2004. The following year, in the summer of 2005, the *Monument to the Women of World War II* was unveiled. This means that there was a major monument to animals before there was one for women.

The NAMES Project AIDS Memorial Quilt is a huge memorial celebrating the lives of people who died because of AIDS. The quilt is made up of panels that celebrate different people who have passed, including famous people such as Freddie Mercury, showing their name and often things connected with their identity. The quilt has been taken on large demonstrations and was even nominated for the Nobel Peace Prize in 1989.

The quilt is made from all sorts of materials, including everything from lace to bubble wrap. There are also decorative items, such as rhinestones and buttons, and personal objects including people's clothes, hair, wedding rings and more. Each 3ft by 6ft panel – the size of an average grave – represents a person. They range from brightly coloured and busy to simple and subtle. The panels were made by individuals, often those who knew the people they were commemorating, then submitted to the project.

THINK–PAIR–SHARE

Around the world people are still persecuted for their religion, sexuality, the colour of their skin and their gender. How can we make sure that these people are not forgotten in history?

Is there anyone notable who you think a monument should be made for?

Are there any existing monuments that you think should be taken down?





■ **Figure 10.16** *Rumors of War*, unveiled in Times Square in New York on 27 September 2019, may look like an old-fashioned monument but, if you look closely, you will see that it is of a contemporary African American man. Civil War statues often commemorate confederate soldiers – *Rumors of War* directly mirrors a statue of Confederate general James Ewell Brown Stuart. Many of these controversial statues are being taken down across the USA, as they commemorate those who fought to keep slavery. Kehinde Wiley's statue is a direct challenge to these statues. *Rumors of War* was moved to Richmond, Virginia, at the end of 2019, close to the monument it mimics. If you look closely at *Rumors of War* you will see that it is a contemporary statue, with the man wearing a hoodie and Nike sneakers. This may get the viewer to think about the racism that exists in the USA today.

Find out more about the quilt, and view individual panels here: **www.aidsmemorial.org/quilt**

If you wanted to create a quilt panel for a victim of AIDS, the full instructions are here: **www.aidsmemorial.org/make-a-panel**

DISCUSS

If you were commemorated on a quilt, what would you want your panel to say? What images would you have and what materials would be used? Why?

ACTIVITY: Monuments and memorials near you

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

Do an internet search to find out which monuments/memorials are close to your school or where you live.

- **Have you noticed them before?**
- **Describe how they look.**
- **What impact do they have on you?**
- **Did you know who/what they commemorate already?**
- **What else can you find out about them?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Design situation

Your town has received a large grant to build a public monument. The town planners and mayor have no idea what they want it to look like, or what it should commemorate, so they have decided to hold a competition and let the residents choose a winner. You need to submit a proposal, along with a model, to win the chance of your monument being built.

You might choose to commemorate someone you think is important who is not currently celebrated. You might even think about a monument in your own town that you think needs to be taken down and replaced.

Although we have looked at monuments made of everything from sand to fabric in this chapter, for this project you should be thinking of a more traditional sculptural monument. Of course, you will not be designing and creating a full-sized monument – instead we will make a smaller model called a **maquette**.

GRASPS

Sometimes teachers use the acronym 'GRASPS' to help them create authentic assessments. It also helps students to understand the assessment and to use role play to fully engage. GRASPS stands for goal, role, audience, situation, product and standards.

The GRASPS for this project are given in Table 10.1.

G	Goal	To produce a high-quality maquette that will win the town's monument competition and be made into a full-size monument
R	Role	Resident and designer
A	Audience	A judging panel made up of the mayor, town planners, town representatives and residents
S	Situation	The town recently got a grant to build a monument and is seeking public submissions You can choose the town where you live, a place where you have lived or where your family is from, or somewhere else that is important to you
P	Product	A maquette, along with a short written or audio explanation or guide
S	Standards	Criterion A–D

■ **Table 10.1** GRASPS, Wiggins and McTighe in *Learning by Design*



■ **Figure 10.17** *Spindle Piece* is a sculpture by the famous British artist Henry Moore; he made several large versions, 3.35 m high, which can be seen in America, Saudi Arabia, Britain and Japan, but his maquette was only 15.6 × 13.7 × 11.4 cm

Transfer skills

We have already discussed transferring some knowledge from your Individuals and societies classes in this chapter. To make a scale model, you will also need to use some skills learnt in your math lessons. If you are envisioning a monument that will be 3 m tall, how big would you make the scale model?

What will your monument commemorate?

- Will it commemorate a person, people, an event or something else?
- What facts do you know about this?
- Why have you chosen this?
- Who is represented in the monument?
- Where will your monument be placed?
- Why is your monument important for this location?

PROJECTING ACROSS DISTANCE

What is the bigger topic? For example, if you are commemorating a local battle, the bigger topic could be war or conflict; if you are commemorating a famous politician, maybe the bigger picture is peace or justice.

How is the topic, event or issue viewed in:

- **your community?**
- **another city or town in your country?**
- **a country east or west of your country, where people may think differently about the theme, event or issue?**
- **a country north or south of your country, where people may think differently about the theme, event or issue?**

What might account for any similarities and/or differences between and within these communities and countries?

ACTIVITY: Analysing existing monuments

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

See if you can find any existing monuments that commemorate your topic/person/event or a similar topic/person/event. Annotate the pictures with labels to show its size and the materials used, as well as any symbolism.

How would you behave and feel around these monuments? Do you think they share a clear message or not? What do you like or dislike about them? Who visits these monuments? Who passes by them?

You may also choose to **analyse** some monuments you love, which will act as inspiration for your own design.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

ACTIVITY: Sharing your ideas

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

As a class you can do one, two or three of the following activities to compare your ideas:

1. **Project a world map on to your whiteboard. Share your chosen location for your monument with your classmates by placing a sticky note on the map. Look for any similarities and/or connections.**
2. **Divide into two teams – one group will be students who are creating a monument to commemorate a specific date (or movement associated with an era) and the other will be those who are not. The second group will help the first group move into chronological order. By doing this, you will hear lots of your classmates' ideas. Do you notice any patterns in the timeline? Has your class chosen older events, or more recent ones?**
3. **Each person should tell the class about their topic in no more than two sentences. As a class, you should then try to group the different ideas into categories. You can choose how you categorize them but you should explain your thinking. At the end of this activity students should be in different physical spaces in the classroom, to show what category their idea belongs to. You could do a similar activity on flipchart paper, where you draw lines to connect different ideas, and write along the lines what the connection is.**

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (iii).

COLOUR–SYMBOL–IMAGE

- **Choose a colour that you feel best represents or captures the essence of your topic.**
- **Choose a symbol that you feel best represents or captures the essence of your topic.**
- **Choose an image that you feel best represents or captures the essence of your topic.**

Sketch these in your process journal. How might you use them in your design?

How do you want people to feel when they visit your monument? Maybe they would be joyous and celebrating, sad and reflective, or shocked and angered? How might you use colours, symbolism or imagery to lead your audience to feel and react in a certain way?

Creative-thinking skills

As you are entering a competition, you want the judges to be able to imagine what your finished monument will look like. To make your final drawing look really realistic, you should use one-point or two-point perspective. There are many video tutorials online. You could also follow these two step-by-step articles on WikiHow:

- How to Draw Perspective: **www.wikihow.com/Draw-Perspective**
- How to Draw in Two Point Perspective: **www.wikihow.com/Draw-in-Two-Point-Perspective**

You might also want to draw some of the environment, to show where your monument would be placed. Alternatively, you could take some photographs of the location and add your sketch on top.

ACTIVITY: Rendering

ATL

- Communication skills: Interpret and use effectively modes of non-verbal communication

Rendering means to add shading, colour and texture to an image. It is useful for graphic designers and architects because they can use this skill to show the materials they are drawing, such as wood, glass, concrete or metal. It can also make an image look more 3-D, which in turn makes it more realistic.

Add texture to your sketches so that they are easier to interpret. You could even draw your monument without any texture, photocopy it and then draw in different textures so that you can see what it would look like if it was made from different materials.

You could ask people to give you feedback on the different material types before sketching your final design.

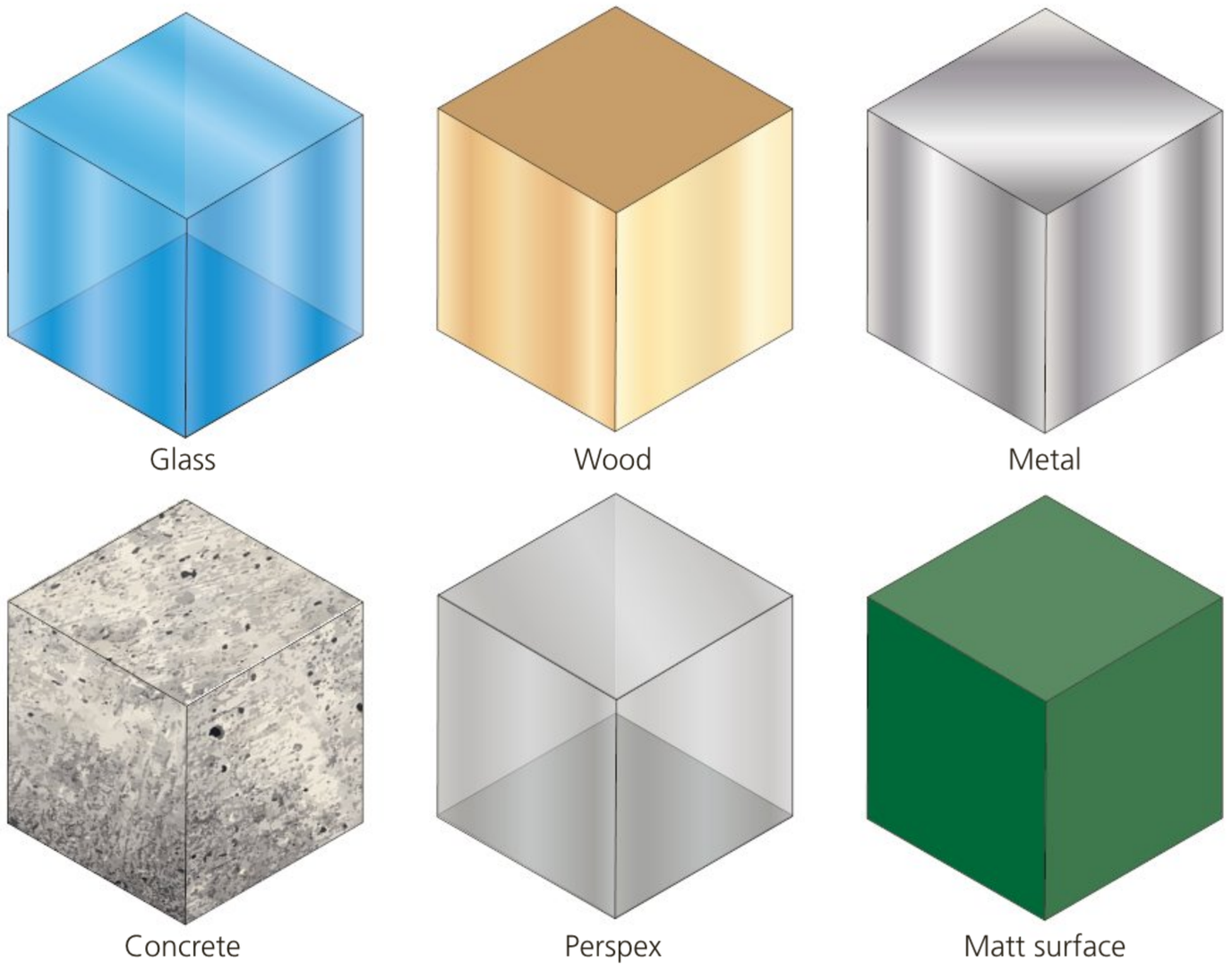


Figure 10.18 Adding texture to sketches

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).

ACTIVITY: Design specifications

ATL

- Organization skills: Plan strategies and take action to achieve personal and academic goals

The specifications for your maquette should include some details about your final monument, even though you are only making the model. This is because you would need to include some information about the full-sized monument if you were really entering the competition.

Specification type	Your specifications	Reason	Testing method
Function How will viewers know what you are commemorating? Will it be represented visually, symbolically, or with accompanying text or audio?			
Aesthetics What will your final maquette/monument look like? How would you **describe** the shapes and texture? Will it have any words on it?			
Environment Where in your town would you like your monument to be? The park? The town square? Somewhere else?			
Size What size will your maquette be? What size would the full-sized monument be?			
Material What will your maquette be made from? What would the full sized monument be made from?			
Safety How will your maquette be safe? How would the full-sized monument be safe?			
Target audience Who is your target audience? How will the audience know what the monument is about? How can your design influence how the viewer interacts with or feels about the monument?			

Table 10.2 Specifications for your monument

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

ACTIVITY: Making your maquette

ATL

- Creative-thinking skills: Create original works and ideas; use existing works and ideas in new ways

Depending on your idea for your finished product, and the equipment available to you, you might be making anything from a physical product out of papier mâché, wood, plastic or metal, to an AR/VR 3-D digital maquette.

If you are making a physical product, make sure that you work safely. This includes tying up your hair, wearing goggles, and wearing earmuffs when loud machinery is being operated. You should also keep your tables and the floor beside you as clean and empty as possible, and make sure you are aware of your surroundings (yes – this means no headphones for music)! Your teacher will have done safety lessons with you, and you may have even done a short course or earned a safety certificate. If you are unsure or want a refresher on using any equipment, however, make sure you ask for support.

Make sure you document your process through screenshots or photographs. If you are using a piece of machinery that has safety guidelines, record evidence to show that you have followed them.

Take your time with your maquette – make sure it is detailed and finished to a high quality. A rushed product will not look good! You should **create** a plan that **explains** what you will do in each of your Design classes, how long you will spend on each activity, and which materials and tools you will use. This logical plan will help you to stay on task and to plan ahead.

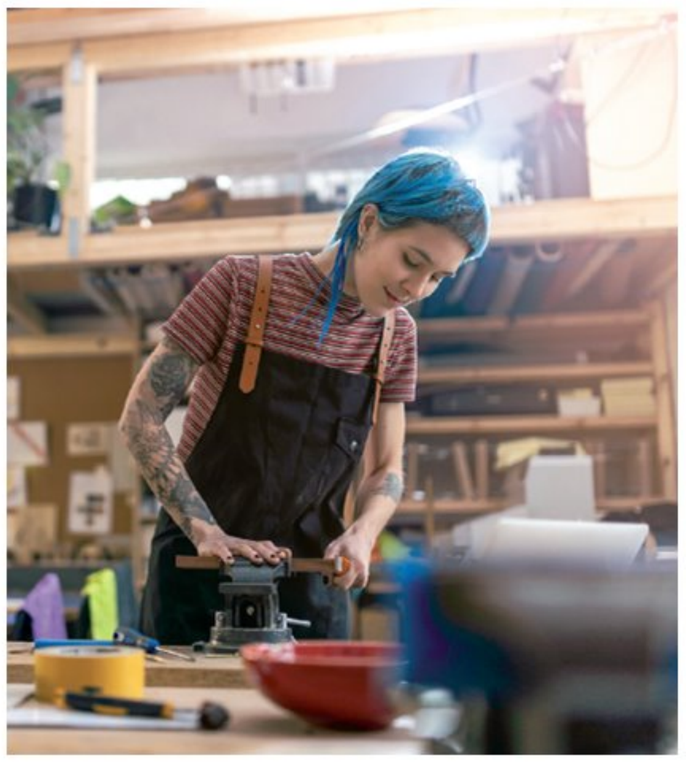


Figure 10.19 This woman might look cool … but she is not safe! What could she do to be safer?

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii and iii).

A ROUGH PROTOTYPE

Before you make your maquette, you might want to design a rough prototype so that you can see what it will actually look like in 3-D. This will give you an opportunity to make final changes before you commit to a more expensive, permanent or time-consuming material, such as wood.

Useful materials for making your prototype include: tape, playdough, pipe cleaners, coloured paper, felt-tip pens, glue, paper clips, lollipop sticks, sticky notes, and whatever other consumables you have available.

PRESENTING YOUR MAQUETTE

As a class, you should display your maquettes as a mini exhibition. What information would you like to accompany your maquette? Will you have a sign, a leaflet, or even an audio accompaniment? You should **explain** the topic and how your monument links to that topic (for example, any symbolism). You might wish to add information about your thoughts as a designer too.

You should leave a feedback form with your maquette or notes for people to write comments on. You might choose to have one document that everyone adds their thoughts to, individual pieces of paper to drop into a comment box, or even a QR code linked to a digital form.

Communication skills

When you are gathering feedback, never just ask for general thoughts. You should ask for feedback on specific things, especially those that you are uncertain of or things you might change if you were to re-do the project. You could ask for feedback based on different elements, for example, such as the style or materials used.

An important part of your maquette is the message that it communicates about an important topic. You might want to ask people what they learnt or felt, if they understood any symbolism, or if they think you could communicate your topic more clearly.

You could also ask people to 'TAG' your product:

- **T:** tell you something they like about your work
- **A:** ask you a question about your work
- **G:** give a suggestion for improving the work.

Remember, if you want good feedback, you should give good feedback too! Make sure you provide detailed, helpful feedback to your classmates.

Use the feedback to **describe** what went well and what you would improve. You could also use the feedback to show why your maquette should win the grant!

◆ Assessment opportunities

- ◆ This activity can be assessed using Criterion D: Evaluating (i, ii and iii).

! Take action

- ! You might choose to send photographs/ screenshots of your maquette to your town's mayor, the local council, town planners or people connected to the topic you are commemorating, or invite them to your exhibition.
- ! Is there a monument/memorial you disagree with in your town, or perhaps there isn't a monument for an event, person or group that you think should be represented in your town? Start a campaign or write to local officials to make changes.

ACTIVITY: Making an impact

■ ATL

- ■ Critical-thinking skills: Consider ideas from multiple perspectives

Reflect on your work and what you have learnt about monuments and memorials throughout this chapter. What sort of impact do you think a full-sized version of your monument would have on those who saw it? Why do you think your monument, and monuments and memorials in general, are important? Do you think reflecting on the past is important? Why/why not?

◆ Assessment opportunities

- ◆ This activity can be assessed using Criterion D: Evaluating (iv).

Reflection

In this chapter you have explored many different monuments and memorials, and have considered why it is important to reflect on the past. You designed a monument/memorial connected to something you think is worth remembering and learning from. Importantly, you also made connections and used knowledge from other subjects, and examined how designers' work often incorporates other disciplines.

Use this table to evaluate and reflect on your own learning in this chapter.					
Questions we asked	**Answers we found**	**Any further questions now?**			
Factual: Who is represented in memorials/monuments? Who is not represented?					
Conceptual: How can a designer shape the way their target audience feels about their work?					
Debatable: Should we be passive when interacting with memorials/monuments? Should we just forget the past and move on?					
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Organization skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					
Transfer skills					
Learner profile attribute	Reflect on the importance of being knowledgeable for your learning in this chapter.				
Knowledgeable					

11 How can we best create a living space to suit an individual's needs?

The most important thing about our **systems** is that they **function** correctly, **where and when they are needed**.

CONSIDER THESE QUESTIONS:

Factual: What are the problems that homeless people face? What existing solutions are there to these problems?

Conceptual: How can I make a functional, but fun, living space?

Debatable: Should designers concentrate only on making functional emergency shelters?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

homeless displaced



■ **Figure 11.1** Emergency shelter, Haiti

IN THIS CHAPTER WE WILL …

- **Find out** about the different causes of homelessness.
- **Explore** how designers are already making a difference.
- **Take action** by designing our own solution.

We will reflect on this learner profile attribute …

- Caring – we will use empathy, compassion and respect to help design a shelter that will have a positive impact on another person.

Assessment opportunities in this chapter:

- **Criterion A:** Inquiring and analysing
- **Criterion B:** Developing ideas
- **Criterion C:** Creating the solution
- **Criterion D:** Evaluating

These Approaches to Learning (ATL) skills will be useful …

- Organization skills
- Information literacy skills
- Critical-thinking skills
- Creative-thinking skills

HOMELESSNESS

An estimated 100 million people around the world are homeless, and over 1 billion people are without adequate housing.

People can become homeless for many reasons, including civil unrest and war; natural disasters; poverty; mental health problems and addiction; a personal or emotional crisis or trauma, ranging from a house fire through to domestic abuse, or being rejected by immediate family due to sexual discrimination.

Some situations, such as a family dispute, affect individuals, while other situations, such as a natural disaster, can make large groups of people suddenly homeless.

While there are some people who choose to be homeless, for most people it is not a choice but a failure in the systems that are supposed to protect them.

Article 25 of the Universal Declaration of Human Rights states:

> *'Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.'*

Although this is a human right, it is clearly one many people are not given. In this chapter we will explore solutions to help homeless people. We will look at current solutions, including temporary shelters and products designed to improve the lives of homeless people, and we will even look at innovative materials that are being used to design emergency and short-term housing.

REFLECTION

Write a short paragraph in your process journal showing what you think about homelessness. We will repeat this activity at the end of the chapter to see how your thoughts have changed. If you want, you can also write down what you know and feel about homelessness.

What are the problems my client faces?

DISCUSS

What does home mean to you?

What things in your home do you think you could not do without?

LEARNING MORE ABOUT HOMELESSNESS

The numbers of homeless people, and reasons for being homeless, change constantly – it could change because of a new government policy, or because of a natural disaster. Keeping track of the number of homeless people in real time can be very difficult, however, as homeless people don't always leave a paper trail. While current news articles about natural disasters can reveal how many people have been displaced, more general data is often a year or two old. Also, sometimes data is not linked directly to homelessness but to other things, such as poverty or inequality.

EXTENSION

Our World in Data is a website that contains research and data to 'make progress against the world's largest problems'. The website covers many topics, including homelessness: **https://ourworldindata.org/homelessness**

They also have a tracker linked to the UN's Global Goals for Sustainable Development (**https://sdg-tracker.org**). While Target 11.1 includes safe and affordable housing, Target 10.1 focuses on reducing income inequalities.

Although not always reliable, Wikipedia has a page that shows the homeless population of different countries, as well as a page showing different homelessness organizations:

https://en.wikipedia.org/wiki/List_of_countries_by_homeless_population

https://en.wikipedia.org/wiki/List_of_homelessness_organizations

You might also choose to look up your local government's website to find out about homelessness in your area. You might find that the numbers are under-reported, however, both to show the government in a more positive light, and because it is hard to get accurate numbers – homeless people don't often have documentation because they do not have an official address.

You could also read these articles on homelessness:

www.theguardian.com/society/2019/nov/19/rage-and-responsibility-nine-months-of-reporting-homeless-deaths-why-isnt-it-election-priority

https://psmag.com/social-justice/why-cant-we-count-the-homeless-population

www.esri.com/about/newsroom/arcnews/getting-a-more-accurate-census-of-the-homeless-population

https://yaleglobal.yale.edu/content/cities-grow-so-do-numbers-homeless

THINK–PAIR–SHARE

How many homeless people have you seen in your community? What do you think might have led them to become homeless?

WORLD HABITAT DAY

The first Monday of every October is designated as World Habitat Day by the UN. Part of the purpose of this day is to reflect and take action related to everyone having the basic right to adequate shelter.

ACTIVITY: Homey words!

ATL

- Organization skills: Use appropriate strategies for organizing complex information

Work as a group to complete this task.

1. **Write the following words on a piece of paper and cut them all out:**
   art, TV, reading lamp, bed, sink, washing machine, shower, toilet, fridge, dishwasher, security cameras, couch, desk, lamp, chair, dining room, oven, kettle, remote control, cupboard, spice rack, pots and pans, cutlery, crockery, stairs, living room, house plants, kitchen, garage, parking space, pantry, air conditioning, clothes dryer, computer, carpet, windows, clock, table, curtains, bedside table, blanket, garden, books, bookshelf, trampoline, games console, dining table, photographs, radiators, bedroom, toys
2. **Organize the words in any way that you want. You could organize them by room, by type, by what you have or don't have, or any other method.**
3. **Share with the other groups how you organized the words.**
4. **Now reorganize them from most important item to least important item.**
5. **Share with the other groups how you organized the words.**
6. **Now look again – this time you can only pick three items. Which are the most important to you?**
7. **Compare and contrast your final three items with the other groups. What similarities and differences did you notice?**
8. **Write down your three items – you will need this later in the chapter.**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

What existing solutions are there to this problem?

EMERGENCY SHELTER

Now we will explore some different emergency and temporary shelters. Most of these are short-term solutions for use before someone finds more permanent housing. These examples show solutions made for people who are homeless for different reasons in different locations.



■ **Figure 11.2** This emergency shelter can fit up to three people and can be constructed quickly indoors or outdoors

UNICEF Bricks contain water and food, but can also be used to create a shelter. Inspired by Lego bricks, they slot together easily so that anyone can use them to construct a temporary shelter.

Find out more:

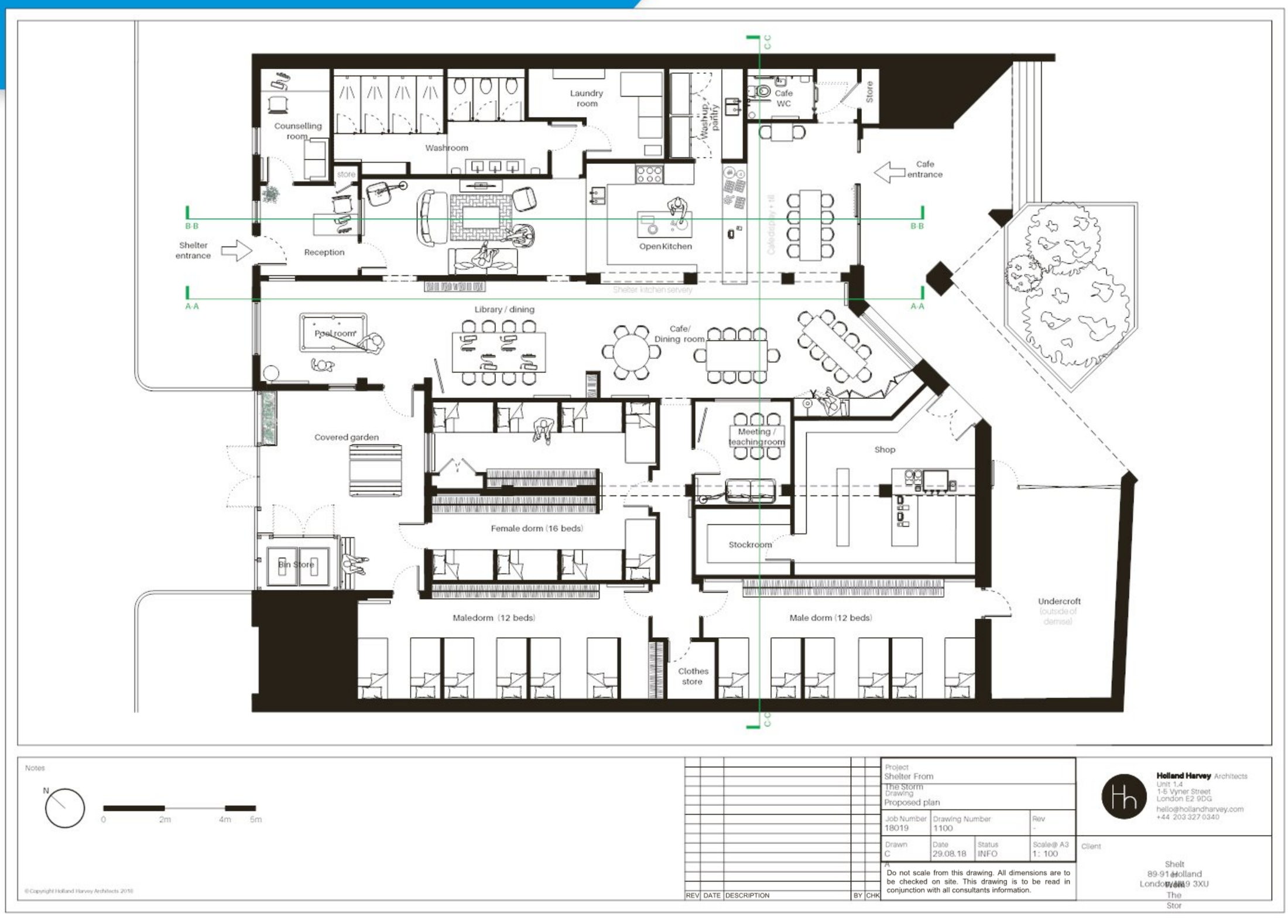
https://inhabitat.com/unicefs-amazing-lego-inspired-bricks-carry-food-and-water-to-disaster-victims

https://ifworlddesignguide.com/entry/70832-unicef-brick

You can find out about the Shelter in a Cart finalists:
www.designboom.com/competition/shelter-in-a-cart



Figure 11.3 In 2016 IKEA won the Beazley Designs of the Year competition with their flat-pack shelter for refugees; they are easy to assemble, sturdy and secure



©Copyright Holland Harvey Architects 2018

■ **Figure 11.4** Shelter from the Storm is a free, emergency night shelter in London constructed within an old supermarket; it provides a bed, dinner and breakfast for up to 40 people 365 nights a year. They also provide in-house counselling and have helped people get into employment or long-term accommodation. The space itself is beautiful, which must have a positive impact on the people who use its services. It has lots of amenities, including a meeting space, IT facilities and a clothing store.



Shelter from the Storm: **https://sfts.org.uk**



Figure 11.5 VCP Village, Kansas City, is a community of tiny homes built specially for homeless veterans by the Veterans Community Project. The house comes with basic furniture and other amenities such as bedding and food, which is provided to the veterans free of charge. While living in the village, veterans are able to work with VCP to get the support they need, which then leads to more permanent housing.

VCP Village: **www.veteranscommunityproject.org/faq-s**

Sheltersuit is a warm coat that can be turned into a sleeping bag. It is designed to support people who are sleeping rough before they can find more permanent accommodation. It is made from upcycled materials and is waterproof and windproof.

https://sheltersuit.org



■ **Figure 11.6** ADIFF makes lightweight, waterproof coats that can turn into a tent for shelter

ADIFF: **https://adiff.com**

Sun King Supportive Housing is one of the many social housing projects in design development by Lorcan O'Herlihy Architects. This project aims to provide permanent shelter to 100 formerly homeless people in Los Angeles, a city with a large homeless population and increasingly more expensive housing.

Find out more about their projects: **http://loharchitects.com**

ACTIVITY: Analysing existing products

ATL

- Critical-thinking skills: Identify obstacles and challenges

Consider the examples of emergency shelters on pages 224–228 and answer the following questions:

- **How long do you think someone could use this solution for?**
- **How many people can use each product at one time?**
- **Is it mobile or a permanent structure?**
- **How easy is the product to use and maintain?**
- **What needs (physical and/or emotional) does each solution support?**
- **Where would the product be/not be suitable? (For example, think of the weather.)**
- **What do you think the users think of each product?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Collaboration skills

Empathy is one of the fundamental tools of any designer. You need to use empathy to clearly understand a problem, a client's needs and wants, and to understand how to make the perfect product for them. Empathy can also help us be more caring and understanding citizens of the world. By trying to understand those who we see as different to us, we might find similarities we did not know we have.

Unfortunately, there are many people who view *homeless people* as the problem, instead of *homelessness* as the problem. Using empathy will help us understand the experience of homeless people, from the practical elements, such as what it is like to sleep outside with no shelter, to the emotional elements, such as what it is like to not have a safe space to call home.

The following activities will help us to empathize more with homeless people.

BEGINNING–MIDDLE–END



Figure 11.7 Story activity

- **If this photograph is the beginning of a story, what might happen next?**
- **If this photograph is the middle of a story, what might have happened before? What might be about to happen?**
- **If this photograph is the end of a story, what might the story be?**

STEP IN–STEP OUT–STEP BACK

Choose one of the people in Figure 11.8.



Figure 11.8 Around 70 per cent of Madagascar's population live in poverty, with many people homeless or living in inadequate shelter; many work on dumps, sorting out waste from other countries; Madagascar is home to one of Africa's largest dumps, Ralalitra

Step in: Given what you see and know at this time, what do you think this person might feel, believe, know or experience?

Step out: What else would you need to learn to understand this person's perspective better?

Step back: Given your exploration of this perspective so far, what do you notice about your own perspective and what it takes to take somebody else's?

Imagine that you step inside the picture.

- **What do you hear?**
- **What do you see?**
- **What do you smell?**
- **What do you feel physically?**
- **What do you feel emotionally?**

Read: **www.theguardian.com/global-development/2017/dec/20/life-madagascar-mega-dump-ralalitra-antananarivo-in-pictures**

CIRCLE OF VIEWPOINTS



■ **Figure 11.9** Villagers watch as elephants are used to destroy their housing in the Amchang Wildlife Sanctuary, Guwahati, India

There are many people in Figure 11.9 with different perspectives. You might choose to think about the perspective of the police riding the elephants, or one of the adult villagers watching the demolition. You could even reflect on what the viewpoint of one of the local children back in the village might be. You can do this as a written activity or as a discussion in pairs.

1 **I am thinking of this eviction from the viewpoint of …**
Pick one from the police, an adult villager or a child villager.
2 **I think …**
Describe the topic from your viewpoint. Be an actor – take on the character of your viewpoint. Write/talk in the first person.
3 **A question I have from this viewpoint is …**
Ask a question from this viewpoint.

How might taking on the perspective of a homeless person, including thinking of questions they might ask, help you understand them better?

Link: **www.theatlantic.com/photo/2017/11/using-elephants-as-bulldozers-to-preserve-wildlife-sanctuaries/547049**

How can I make a functional, but fun, living space?

MATERIALS

The materials we use for shelters are important. We want to make sure they can protect people from the weather, such as wind and rain; we also want to make sure the user does not get too hot or too cold.

Creating shelters for homeless people can have a lot of challenges, depending on their situation. For example, if you are making an emergency shelter for people who have just lost their homes due to a natural disaster, you might not have materials close to hand. If you are making a shelter for someone living on the streets of a city, it will need to be durable but also easy to move.

Let's look at some innovative materials that could be helpful for our designs.



Figure 11.10 Mycelium is the part of the fungus that mushrooms grow on. It can be grown easily at home, and designers have used it to create everything from lampshades to furniture. More and more designers are using it for building, to create walls or insulation between walls. Here mycelium has been added to a timber frame to create a performance pavilion.

Link: **https://thegrowingpavilion.com**

Watch: **www.youtube.com/watch?v=rbsj9fzykNs**



Figure 11.11 Designed for music festivals originally, KarTent is a single-use tent made from biodegradable cardboard and upcycled after use!

Link: **https://kartent.com**

Read: **www.theguardian.com/sustainable-business/2016/jul/02/cardboard-bioplastic-tents-pitching-up-at-festivals-glastonbury-waste**

Watch: **www.youtube.com/watch?v=yTpEaeGB_Nw**



Figure 11.12 Plastic Bottle Village is a village in Panama with houses (and even a castle) made primarily from discarded plastic bottles

Link: **www.plasticbottlevillage-theline.com**

Watch: **https://vimeo.com/182464603**

Read also: 'Bottled sand builds better homes for Sahrawi refugees': **www.unhcr.org/news/latest/2017/1/5874c2dd4/bottled-sand-builds-better-homes-sahrawi-refugees.html**



Figure 11.13 New Story partnered with ICON to build a community of homes for people in Mexico; what makes these homes different is that they were 3-D printed

Link: **https://newstorycharity.org/3d-community** and **www.iconbuild.com**

Watch: **https://youtu.be/PbgCu0aUobE**

Should designers concentrate only on making functional emergency shelters?



Figure 11.14 Concrete Canvas is a flexible material that dries hard when water is added to it; the company created emergency shelters with it, which can be packed small for transport then simply inflated with a leaf blower, hosed down and left to dry; they have built-in doors and are solid enough to stand on when dry

Link: **www.concretecanvas.com**

Watch: **https://youtu.be/Vb1pdvvoVoQ**

ACTIVITY: A shelter for who?

ATL

- Creative-thinking skills: Make unexpected or unusual connections between objects and/or ideas

Look at each of the different material types in Figures 11.11 to 11.15 and write down the benefits and limitations of each one. It might be helpful to watch the videos so that you understand more about each material first.

Words that might help you include: durable, recyclable, quick, easy, long-lasting, secure, windproof, waterproof, environmentally friendly, accessible, safe, sustainable, long-term, short-term, beautiful, simple, complex, affordable, expensive.

Now look back at all the examples of shelters and materials shared in this chapter.

Which solution do you think would best fit the following scenarios and why:

- **someone who has just lost their home due to an earthquake**
- **someone who has been homeless, living on the streets, for a long time**
- **a family living in inadequate shelter in a developing country.**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

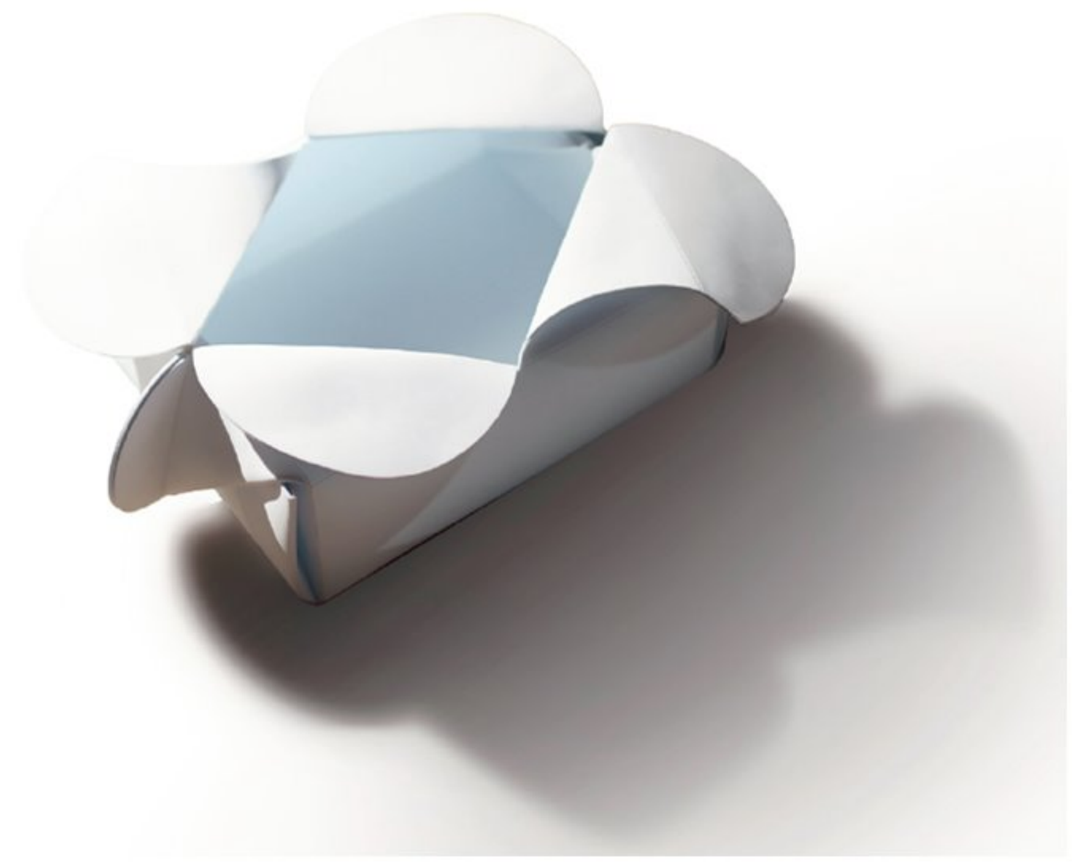
MORE THAN JUST A SHELTER

When providing a shelter, you might think of additional things that would help the person settle in. This could be anything from blankets to light. Look back at the words you sorted in the 'Homey words!' activity on page 223. Think about which things would be useful for an emergency shelter.

OTHER INNOVATIONS TO HELP HOMELESS PEOPLE

There are many emergency shelter competitions for designers to enter, so it is easy to find examples of interesting and exciting innovations. Many designers are coming up with other products that can help homeless people, or those living in temporary shelter, too.

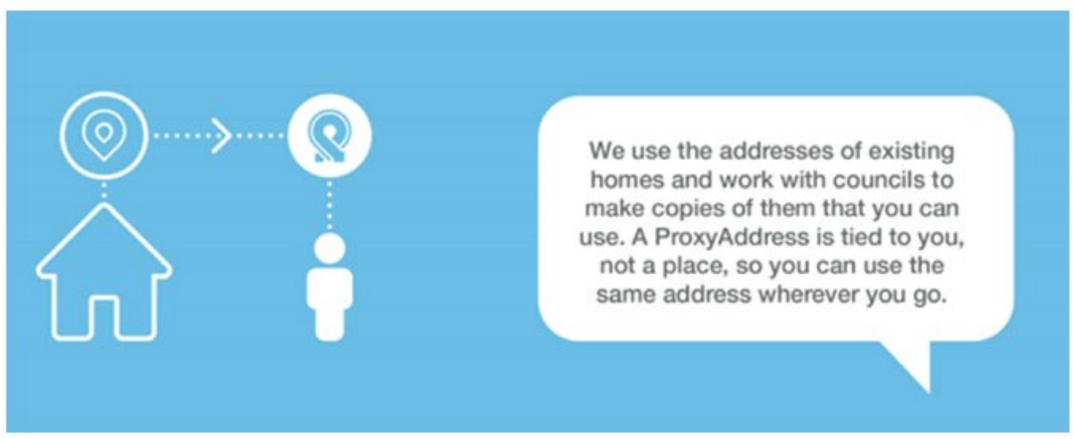
Let's take a look at some examples of these solutions.



■ **Figure 11.15** Night Loo is a reusable toilet for refugee women and girls living in camps that allows them to go to the toilet in their tents at night time instead of going to the shared toilets, which are often unsafe; it contains a substance that turns urine into powder, which makes it easier to dispose of

Link: **www.annameddaugh.com**

Watch: **https://vimeo.com/279129036**



■ **Figure 11.16** Without an address many homeless people struggle to access social services and have problems with things like registering for a doctor, setting up a bank account and registering to vote; ProxyAddress gives homeless people a permanent 'address' regardless of where they are, so they can access these services once again

Link: **www.proxyaddress.co.uk**

Watch: **www.youtube.com/watch?v=uW9pxirNpVE**

DISCUSS

Discuss the solutions shown in Figures 11.15 and 11.16 with a partner. Which do you like most and why?



■ **Figure 11.17** Examples of hostile architecture

HOSTILE ARCHITECTURE

While there are many individuals and organizations trying to help homeless people, sadly there are also groups deterring their progress. While it may be argued that local councils and government organizations should be among the first to help homeless people, and even to try to end homelessness, sadly they are not always doing this.

Hostile architecture – sometimes called defensive design – are things added to public spaces to discourage certain behaviours, including sleeping rough and sometimes even sitting. These take the form of anything from spikes (often called 'anti-homeless spikes') through to metal dividers on benches.

DISCUSS

Why do you think councils create hostile architecture?

How might a homeless person feel when they see this?

What else could the council be spending money on, to help homeless people?

Read more: **www.boredpanda.com/society-fights-homeless-inhumane-ways**

Watch 'Why cities are full of uncomfortable benches': **https://youtu.be/WeyLEe1T0yo**

Design situation

You are entering a competition to create an emergency shelter. You can either create a prototype, a scale model or a digital 3-D model. You can pick from one of the following three categories:

1. Design a shelter for a homeless person who lives in a city. The shelter must be durable but easy to carry.
2. Design a shelter that can be reproduced easily for many people who have lost their homes during a hurricane. The materials used should be easily accessible and the structure must be easy to put together.
3. Design an affordable tiny house that a small family could use as temporary accommodation before finding a more permanent living solution. This could be a family that has been displaced because of something like a house fire or domestic abuse, or it could be for a family living in inadequate shelter, such as a slum or other makeshift structure. The house must contain all the amenities a family would need.

If possible, choose a design situation that you have some connection to. This could be a situation relevant to where you live, have lived, have travelled or where your family live. This might even give you the potential to design for a real client, or to speak to those involved with supporting these vulnerable people (for example, local charity workers).

THE THREE WHYS

Think of the problem you are solving, then use the three whys to help you **explain** why the design situation you picked is important and why it is worth solving:

1. **Why might this matter to me?**
2. **Why might it matter to people around me (family, friends, city, nation)?**
3. **Why might it matter to the world?**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

ACTIVITY: Researching to help you better understand your chosen situation

ATL

- Information literacy skills: Collect and analyse data to identify solutions and make informed decisions

Now that you have picked a design situation, you need to create more context for your design solution. You might firstly want to think about where in the world you are designing for – what materials are available locally? What is the climate like? Come up with a list of questions and put them into two categories – things you need to know (high priority), and things you want to know (low priority). It is always best to design with a true context in mind, instead of a vague imaginary one. Having more information will help you come up with better solutions.

Secondly, you will need to think about the individual people you are designing for. What are their needs and wants? How can you support both their basic physical and emotional needs?

Drawing an empathy map will help you to understand your client better.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii).

ACTIVITY: Existing products

ATL

- Information literacy skills: Make connections between various sources of information

Look back at all the examples already shared in this chapter. Which would be most suitable for your client and why? Be sure to **describe** the different features that make it suitable.

You might **analyse** other innovative designs. Key words that could be helpful when searching are: **design**, **competition**, **shelter**, **homeless**, **awards**, **innovation**. You might also want to look up the **World Habitat Awards**. It was founded by the UN in 1987, the 'International Year of Shelter for the Homeless'.

You might want to **analyse** the non-innovative, inadequate shelters that homeless people with a similar situation to your client are living in. For this, look at the UN's photo library: **www.unmultimedia.org/photo** using the key words **homeless**, **shelter**, **refugee**, **camp**, **earthquake**, **natural disaster**, **hurricane**.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iii).

GLOBAL STRATEGY FOR SETTLEMENT AND SHELTER

The UN Refugee Agency's Global Strategy for Settlement and Shelter says that the guiding principles to think about when designing a shelter are:

1. protection
2. age, gender and diversity
3. equity
4. accessibility
5. access
6. sustainability
7. community empowerment
8. appropriateness and reliability
9. environment.

Link: **www.unhcr.org//530f13aa9.html**

ACTIVITY: Design brief

ATL

- Communication skills: Paraphrase accurately and concisely

We can use the Global Strategy for Settlement and Shelter principles to help us design for any homeless person or group of people.

At this point, you probably have some initial ideas for your shelter. Let's use these principles to strengthen our initial ideas. Use the prompts below to guide you:

- **Protection: How can your shelter help keep the client safe?**
- **Age, gender and diversity, equity, accessibility, access: How can you make sure your shelter is inclusive, regardless of someone's age, gender, abilities, languages spoken or other identity indicator.**
- **Sustainability: How can you make sure you are creating a sustainable product? Think about how long it needs to be used, the skills needed to build and repair it, accessibility of materials needed to build and repair it, and how environmentally friendly it is.**
- **Community empowerment: How will your product provide dignity to the user?**
- **Appropriateness and reliability, environment: How will your shelter be designed for the specific context it will be used in?**

Use your answers to these questions, as well as information from your initial research and analysis of existing objects, to write your design brief.

Start your design brief with:

- **The problem I am trying to solve is …**
- **The way I will solve it is …**

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (iv).

ACTIVITY: Design specifications

ATL

- Organization skills: Plan strategies and take action to achieve personal and academic goals

Now that you have your initial idea, it is time to commit that idea to your design specifications! Remember, these act as both a guide to help you to design, but also as a tool for measuring the success of your final product.

Your specifications should be SMART – specific, measurable, achievable, realistic, timely. SMART can apply to your individual specifications or to the overall project. For example, you might look at the overall project and say 'I will make the complete shelter by October 20th' – this is specific, measurable, achievable, realistic and timely.

Some of your individual specifications may not include something about timeliness, as it will be included in the project as a whole. For example, 'My shelter will be green' does not cover time, but it will be assumed that this will be done when the whole product is complete.

Table 11.1 gives an example of SMART specifications for a ski jacket.

Now make a copy of this table, with the same headings, but use it for your own specifications.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

Specification	Reason	Testing method	SMART?
The jacket will be made of waterproof material	So the user does not get wet in rain or snow	Test the material outside when it rains	SMAR (timely does not need to be mentioned here)
My ski jacket will be complete by October 20th	My client is going skiing in November	Proof of handover of finished product	SMART

Table 11.1 SMART specifications example



Figure 11.18 SMART goals

MATERIALS

Regardless of whether you are making a digital or physical product, we know that materials are important when designing shelters. Even if you are designing something digitally, it is still good to have an idea of what materials the final product would be made from.

ACTIVITY: Action plan

ATL

- Organization skills: Plan strategies and take action to achieve personal and academic goals

For your plan, you need to work out exactly how many lessons you have left in which to finish this project. For each lesson, you need to write down exactly what needs to be done, how long to spend on each step, and what materials and tools you need. You should leave a column for reflections.

In this column you can write if you achieved, surpassed or didn't meet your goal for each lesson, and can make adjustments. This will help you to reflect on any changes made to your original plan.

Copy Table 11.2, adding in as many rows as you need, to make your action plan.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

Lesson	Date	Tasks	Time for each task	Materials/tools	Reflection
1					
2					
3					
4					

Table 11.2 Action plan template

ACTIVITY: Testing materials

ATL

- Organization skills: Select and use materials effectively and productively

Try to get hold of some samples of different materials. You might want to:

- **ask your design teachers for wood, metal, fabric and plastic samples**
- **ask your theatre department if they have scraps of wood or fabric**
- **see if your school nurse has any disposable foil first aid blankets you could use**
- **visit your local fabric shop, wood shop or DIY shop for samples**
- **order some swatches of material online (many companies give out free samples).**

Foil blankets used in first aid kits would be a great material to test. Ask your school nurse if you can have one.

When you have your samples, you should work out how you can test them to make sure they are suitable for your design. This might include testing for durability, flexibility, how waterproof it is, or how warm or cool it is.

Once you've worked out what materials you will use, start doing rough sketches of your ideas. You should try to draw four different versions. Gather feedback from your classmates, teacher or, if possible, someone with links to your design situation, before committing to a final design. They might all like one of your ideas the most, or they might like different parts of different designs, which you can combine into a final idea. You should also look at each idea and see how many of your specifications they meet. Which design idea is truly the SMART-est?

After gathering feedback and assessing each idea, you should now know which one will be best for your client and your design situation. Write down which design you will develop further, and say why, using the feedback and specification assessment to **justify** your decision.

Before committing to making your product, do one more detailed sketch. This should be to scale, properly labelled, and may include multiple angles or even an exploded view. It should be detailed enough that you could proudly submit it to a design competition, along with your final product.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii, iii and iv).

ACTIVITY: Sharing your process

ATL

- Organization skills: Use appropriate strategies for organizing complex information

When you look at entries for design competitions, such as the James Dyson Award, Red Dot Design Award or the Beazley Designs of the Year, you often see that competitors don't just submit their final product or prototype – they actually show the process. This is especially important if you are using an innovative process or materials. If you are designing a structure made from plaster-covered plastic bottles, for example, you need to be able to show people the plastic bottles!

For this project, take many screenshots or videos, then **create** a video showing the process sped up. You might even want to take a time-lapse video, so it automatically shows the sped-up process. Add some royalty-free music and some text commentary (not audio commentary).

Assessment opportunities

- This activity can be assessed using Criterion C: Creating the solution (ii).

EVALUATING YOUR SHELTER

Make sure you **evaluate** your shelter by measuring it against each of your specifications. When you wrote these specifications you already planned your testing method. Make sure this includes getting feedback from an expert or someone related to your design situation, for example someone who works at a charity. You might also want to physically test the product, if you made a prototype or a scale model – for example, how does it cope in the rain?

Make sure you write down all your successes, everything that went wrong, and everything that could be improved. Even if you met all your specifications, maybe there are some changes you would make to improve the design if you were to design it again?

DISCUSS

Empathy is always important for designers, but it has been particularly useful for this project. How do you think your client would respond to your product? What would they like and dislike? How would it make them feel? Could it change their life? What impact could it have on your client?

At the end of this project, think about what parts you would submit for the design competition. This should include high-quality photographs or screenshots of your finished product, your process video, and also a description of the problem and your solution.

I USED TO THINK … NOW I THINK

At the beginning of the chapter you wrote down your initial thoughts about homelessness. Write down your current thoughts using the format:

- **I used to think …**
- **Now I think …**

What has changed and why?

Assessment opportunities

- This activity can be assessed using Criterion D: Evaluating (ii, iii and iv).

! Take action

- ! As a class, you could share your designs in the school newsletter, in an exhibition or **present** them in an assembly. You might even share your designs with an organization that supports homeless people, or enter them into the World Habitat Awards: **https://world-habitat.org/world-habitat-awards**
- ! Consider applying for a volunteer programme, such as Habitat for Humanity, where you can build homes for people in need. You could make sleeping mats for homeless people by knitting plastic bags. You could volunteer for a local food bank or organize for your school to pack food. Your school could organize a collection drive for food and other essentials for homeless people. You could organize an event for World Habitat Day (the first Monday in October). Find out what support is available to homeless people in your community and see how you, your family or your school could help.

Reflection

In this chapter you have explored the different ways someone can become homeless. You have looked at the different contexts and have explored how different solutions can help people who find themselves without shelter. As a designer, you explored ways to provide shelter for a specific person or group of people.

Use this table to evaluate and reflect on your own learning in this chapter.					
Questions we asked	**Answers we found**	**Any further questions now?**			
Factual: What are the problems that homeless people face? What existing solutions are there to these problems?					
Conceptual: How can I make a functional, but fun, living space?					
Debatable: Should designers concentrate on making emergency shelters that are functional only?					
Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**Novice**	**Learner**	**Practitioner**	**Expert**
Organization skills					
Information literacy skills					
Critical-thinking skills					
Creative-thinking skills					
Learner profile attribute	Reflect on the importance of being caring for your learning in this chapter.				
Caring					

12 How can we create a sense of belonging for those without a home?



People can **invent** their own **communities** to be part of.



Figure 12.1 Flags of different countries

CONSIDER THESE QUESTIONS:

Factual: Who has no home? What groups of people do not have a flag? How are flags designed? What do flags symbolize to people?

Conceptual: Why do people want to belong to a physical place? How can we create a sense of home/belonging?

Debatable: Does where we come from impact who we are?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

KEY WORDS

identity
third culture kids
symbolism

IN THIS CHAPTER WE WILL …

- **Find out** what different communities have flags and what these flags represent.
- **Explore** what flags can represent to different people.
- **Take action** by creating a flag for a community that does not have one.

These Approaches to Learning (ATL) skills will be useful …

- Communication skills
- Collaboration skills
- Information literacy skills
- Creative-thinking skills



- We will reflect on this learner profile attribute …
  - Open-minded – we will explore the culture and personal histories of communities, which will help us design a flag for them.

◆ Assessment opportunities in this chapter:

- ◆ **Criterion A:** Inquiring and analysing
- ◆ **Criterion B:** Developing ideas
- ◆ **Criterion C:** Creating the solution
- ◆ **Criterion D:** Evaluating

This website is full of interesting infographics that tell you about flag history and design: **https://flagstories.co**

In this chapter you will be looking at how different flags have connections to people's cultural or national identity. You will find out the symbolism behind many flags, including national flags, LGBTQ flags and more. You will also consider the importance flags can have in helping someone express their identity and will think about those who might consider themselves 'flagless'. The focus here will be on learning about third culture kids (TCK). These are people who are raised in a country that is different to where their parents are from and might even be different from where they were born. It might also be someone who has moved from country to country. For these people the question 'Where is home?' can be very complicated.

ACTIVITY: What flag(s) represent your home?

■ ATL

- ■ Information literacy skills: Access information to be informed and inform others

Research the flag of the country you live in, a country you have lived in, the country you were born in or that your parents were born in. See if you can find out how many changes the country's flag has had and how old the current flag is. See if you can learn about the symbolism behind the current flag.

You may also want to research the following flags: Botswana, Kyrgyzstan, Nepal, Rwanda, Sri Lanka and Uganda.

◆ Assessment opportunities

- ◆ This activity can be assessed using Criterion A: Inquiring and analysing (iii).

Don't forget to take photographs along the way to document the process and share with your class.

Before we dive into learning about third culture kids, let's start by finding out more about flag design.

What do flags symbolize to people?

NATIONAL FLAGS

National flags (or sovereign state flags) represent a country, and usually have symbolism that could show anything from the country's history to its geography. While many countries have easily recognizable flags, which have been unchanged for a long time – such as the UK's Union Jack flag, unchanged since 1801 – many other countries have had many changes to their flags, often because of a change in leadership, wars and revolutions. The flag of Afghanistan has had 18 different designs in the twentieth century alone! Although most have had the colours black, green and red, they have had many different variations, with symbols from a moon to a mosque.



Figure 12.2 The Union Jack flag is a combination of England's and Scotland's flags, along with the cross of St Patrick to represent Ireland. Although Wales is part of the UK, it was not when the flag was designed, and it has not been updated. You may notice that the Union Jack also appears on the flags of some other countries, for example Australia, Fiji, New Zealand and Tuvalu.

See if you can find out what the St Andrew's Cross, St George's Cross and St Patrick's Cross look like, then try to spot each of them in the Union Jack.

As Scotland had a referendum on independence from the UK in 2014, there were talks about how the Union Jack flag should change if Scotland was no longer part of the UK. Designs put forward for a Union Jack without Scotland can be seen here: **www.dezeen.com/2014/02/27/alternative-designs-proposed-for-a-union-jack-without-scotland**

PRACTICE: Flag for us

ATL

- Creative-thinking skills: Create original works and ideas; use existing works and ideas in new ways

If you and your family members are from different countries, or you have lived in a different country, see if you can sketch or collage those flags into one. You could also take your favourite parts from the different flags and combine them (for example, colours from one and shapes from another).

Alternatively, find out which countries your class connects with and see if you can **create** a flag combining all of the flags from these countries.



■ **Figure 12.3** In the flag of Afghanistan, black represents the country's past troubles, red symbolises those who fought for independence, and green represents hope. The image at the centre of the flag is the emblem of Afghanistan, which contains a mosque and wheat. Just like the flag, the emblem has had many changes too.

See if you can find out all of the changes that the flag and emblem of Afghanistan have gone through.



■ **Figure 12.4** In the Brazilian flag, the gold shows the country's wealth and the green represents the country's green forests and fields. The circle represents the night sky, with the stars showing the different federal regions. *Ordem e progresso* is the nation's motto; it means 'order and progress'.



■ **Figure 12.5** The flag of India is known as the Tiranga, which references the three colours (similar to how the French flag is often called the Tricolore). Although the colours of the Indian flag originally represented different religions – saffron for Hindus, green for Muslims and white for other religions – their meaning has changed over time. Saffron now represents courage, green for faith and fertility, and white for peace and unity. The wheel at the centre originally represented Indian independence and self-reliance, but now represents law and general progress. Changes were made to the flag just before India gained independence in August 1947 to make it inclusive of all people in India.

LGBTQ PRIDE FLAG

The LGBTQ Pride flag, also known as the rainbow flag, represents members of the LGBTQ (lesbian, gay, bisexual, transgender or queer) community. First unveiled in 1978 and designed by artist Gilbert Baker, the original colours were hot pink, red, orange, yellow, green turquoise, indigo and violet, with each colour having a different meaning. Before the flag's introduction, the LGBTQ community often used a pink triangle as their symbol, which had a dark history as the symbol that Nazis made LGBTQ people wear on their sleeves.



Figure 12.6 The rainbow LGBTQ Pride flag

There are now many variations, including the South African gay pride flag, flags for gay people of colour, and flags specifically for trans people, to name a few. Although many people do not know the meaning of the colours on it, the flag now generally represents pride and inclusivity, and can be seen in schools, offices, restaurants, bookshops and clubs around the world.



Figure 12.7 The Transgender Pride flag, designed in 1999 by trans woman and Navy veteran Monica Helms

'The stripes at the top and bottom are light blue, the traditional colour for baby boys. The stripes next to them are pink, the traditional colour for baby girls. The stripe in the middle is white, for those who are transitioning or consider themselves having a neutral or undefined gender.'

Read Pride's 'The Complete Guide to Every Queer Pride Flag': **www.pride.com/pride/2018/6/13/complete-guide-queer-pride-flags-0#media-gallery-media-1**

Read Huffington Post's article 'We Have A Navy Veteran To Thank For The Transgender Pride Flag': **www.huffpost.com/entry/we-have-a-navy-veteran-to-thank-for-the-transgender-pride-flag_n_5978c060e4b0e201d57a711f**

NEW ZEALAND

In 2015/2016, New Zealand had two referendums that allowed the country to vote on changing their flag. The result of the final referendum showed that people wanted to keep their existing flag.

During the referendum, members of the public were able to submit design ideas – this meant that people of all ages, with all levels of design skill, submitted designs, resulting in some quite funny, naive ideas, many of which included New Zealand's national bird, the kiwi! Themes such as freedom and respect were very common, as were physical symbols, such as the silver fern. The most common colours were those of the existing flag (blue, red and white), along with green and black.

There were many events and workshops around the country to get the public interested and engaged. They had over 10,000 entries, which were then narrowed down to five designs for the public to choose from in the first referendum. In the final referendum the public were able to vote between the existing flag and the new design, with the former winning the vote.



■ **Figure 12.8** In 2016, New Zealanders were able to choose between their existing flag and a new design

THINK–PAIR–SHARE

Do you like the flag of the country where you live? If you were to change it, what would you change it to and why?



Figure 12.9 The Flag of the Trash Isles

THE TRASH ISLES

Across our oceans there are several places where garbage, mostly plastic, gathers and floats together. One of the biggest ones is the Great Pacific Garbage Patch, which is significantly bigger than France (France is around 643,801 square km, whereas the Great Pacific Garbage Patch is estimated to be around 1,600,000 square km). The floating garbage includes microscopic plastic pieces as well as lighters, toothbrushes, bottles, bags and other waste.

While there are now many companies trying to clean up this mess, such as The Ocean Cleanup (founded by Boyan Slat when he was a teenager), an award-winning innovation designed to raise awareness of the garbage patch is the Trash Isles.

LADbible and the Plastic Ocean Foundation submitted a declaration of independence to the UN, to have the Trash Isles recognized as a country. They realized that submitting this application meant that all members of the UN Council would have to read the application and, if it became a real country, it would be protected by the UN's Environmental Charters. This means all members of the UN would have a responsibility to help clean it up, whereas no one was taking responsibility previously.

They also launched a campaign online to raise awareness among the general public: you could sign up to become a citizen, and they designed a passport, stamps and a flag! Their designs were so thoughtful and successful that they won the Beazley Graphic Design of the Year award in 2018.

Watch 'The Trash Isles': **https://vimeo.com/260227132**

CELEBRATING BRAZILIAN ARCHITECTURE



Figure 12.10 Flags celebrating Brazilian architecture

To celebrate a design festival happening in Brazil, designer Nikki Gonnissen and artist Pieke Bergmans designed a range of flags to celebrate Brazilian architecture. The series of 28 flags matched the colours and shapes of some of the most iconic buildings in Florianópolis, the host city of the festival. Citizens with a connection to each building, including those who lived in the residential buildings, were then photographed with the flag outside the building it represented.

FLY THE FLAG



Figure 12.11 The Flag for Human Rights

Artist Ai Weiwei designed a flag to celebrate and raise awareness of human rights. The footprint on the flag symbolizes everyone who has had to flee somewhere, because their rights were not protected. It also symbolizes that we, as individuals, all leave a mark on this earth. The flag was designed to correspond with the 70th anniversary of the signing of the Declaration of Human Rights, and toured the UK, in schools, libraries and other public places, to raise awareness of human rights violations.

Link to Fly the Flag's website: **https://flytheflag.org.uk**

Watch 'Fly The Flag – Ai Weiwei': **https://youtu.be/1mlrXqhgHNQ**

REFUGEE NATION FLAG



Figure 12.12 Refugee Nation flag

The 2016 Olympics had the first ever Refugee Olympic Team. All Olympic Games start with an opening ceremony, which includes all competitors marching with a flag that represents their country. The non-profit company Refugee Nation worked with artist Yara Said (herself a Syrian refugee) to design a flag for this team. The black and orange colours match those of the life jackets many refugees wear when making the dangerous journey by boat to flee their countries to find a safer place to live. The colours also symbolize hope and solidarity.

Refugee Nation has information about the flag's design, the Refugee Nation anthem and several short videos: **www.therefugeenation.com**

EXTENSION

In the 2018 Winter Olympics, athletes from both South and North Korea competed together under the name 'Korea'. See if you can find out what the Korean Unification Flag looked like.



Figure 12.13 Life jackets left by refugees on the beaches of Lesvos, Greece; these jackets inspired the refugee nation flag

CONTROVERSIAL FLAGS



Figure 12.14 The Estelada being flown in Barcelona in 2017

While flags are usually waved to show national pride and to unite people, they can also be used to stir up civil unrest. This can happen when there are political and social rifts, such as those waving the flag of the European Union and others waving the St George's Cross and Union Jack during the Brexit referendum. In Spain, where many regions are looking for independence, flags such as the Estelada – an unofficial flag that represents an independent Catalonia – are flown outside houses and waved proudly at protests.



Figure 12.15 The Confederate flag in America is incredibly divisive

There are few flags more controversial than the Confederate flag in the USA. It was the flag of the Confederacy, which fought for the right to keep slaves during the American Civil War. Many find it synonymous with white supremacy, while those who support the flag say it shows the country's history, which they do not want to forget. Although this flag is highly political and upsets many people, it is still flown proudly by many American citizens. As freedom of expression is protected and celebrated in America, it does not look like the Confederate flag will be disappearing anytime soon.

EXTENSION

Taking Down the Confederate Flag:
www.facinghistory.org/resource-library/taking-down-confederate-flag

Inside the battle over the Confederate flag:
https://edition.cnn.com/2015/06/21/politics/south-carolina-confederate-flag-debate/index.html

Pride and prejudice? The Americans who fly the Confederate flag: www.theguardian.com/us-news/2018/aug/06/pride-and-prejudice-the-americans-who-fly-the-confederate-flag

The debate over the Confederate flag:
https://share.america.gov/debate-over-confederate-flag

THINK–PAIR–SHARE

When you think of the flag that represents your country (where you live, where you are from or where your parents are from), how does it make you feel and why? Do you think there is anyone who would have the opposite feelings to you? Why?

EXTENSION

See more examples of flags including:

Flags designed for every Star Wars planet: www.dezeen.com/2015/12/16/scott-kelly-fictional-flags-planets-of-star-wars

Vintage shipping company flags:
www.messynessychic.com/2015/06/19/hundreds-of-awesome-vintage-sea-flags-hidden-away-in-a-museum

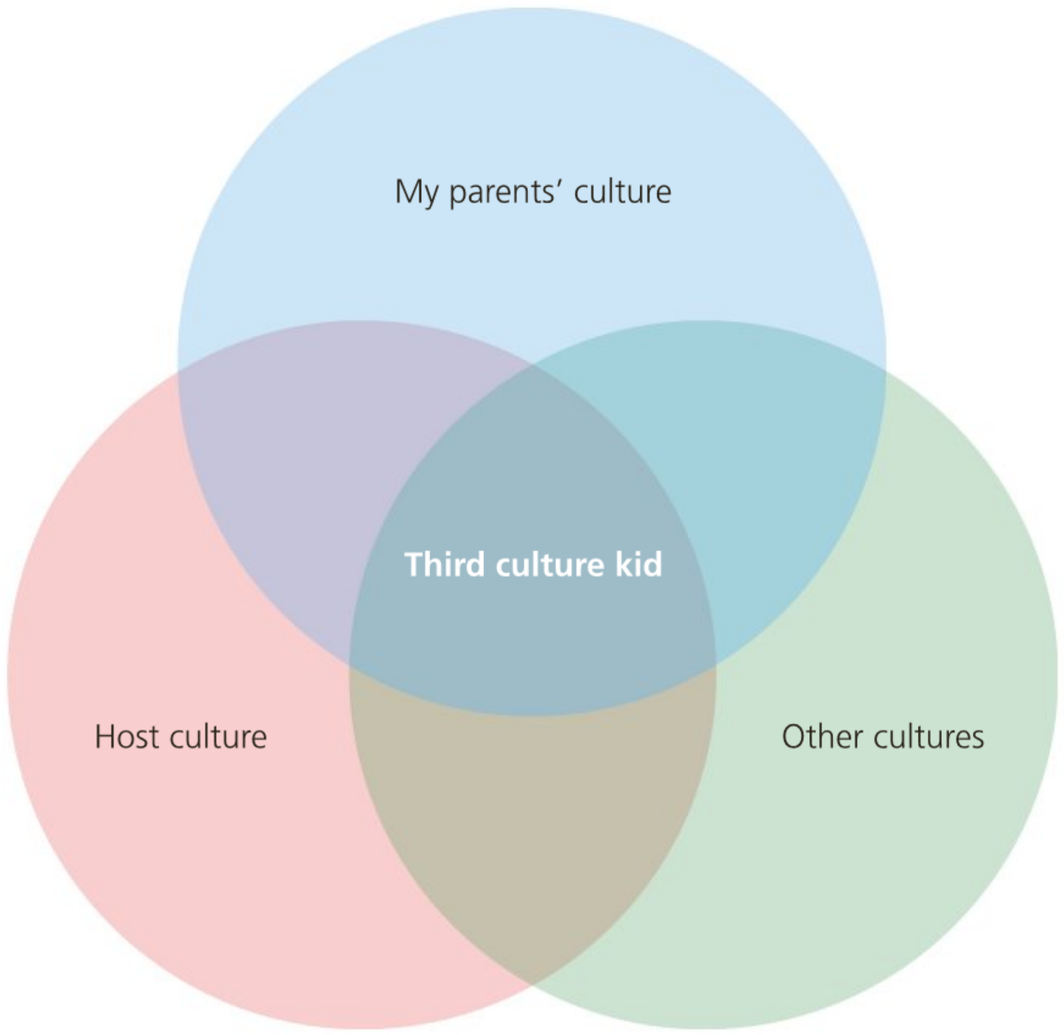
All UK flags: www.flaginstitute.org/wp

CIA World Factbook – Flags:
www.cia.gov/the-world-factbook/references/flags-of-the-world/

Free rice game – Flags of the World (as you play, adverts pop up, and money is donated to the World Food Programme):
https://freerice.com/categories/flags-of-the-world

Designers create Martian flags for Space10 exhibition:
www.dezeen.com/2018/06/20/mars-space-10-exhibition-martian-flag-assembly-design

THIRD CULTURE KIDS



■ **Figure 12.16** If you are a third culture kid, why not create a **Venn diagram** to show your cultural background, with each circle representing the different countries that are significant to your identity

THINK–PAIR–SHARE

When, where and why do we use flags?

You might also discuss when the last time you saw a flag was. It might have been flying proudly in your school hallways, or it could even have been on a pizza box in your local supermarket! During this chapter, you might notice more flags around you than you have ever noticed before.

A third culture kid (TCK) is someone who spent their formative years submerged in different cultures. For example, they might have one parent from one country and another from a different country, or they might have been born or raised in another country. They may also be surrounded by people who come from many different countries. While this is very common in international schools, it is happening more and more as we become a more globally connected world. While TCKs benefit from experiencing a wide variety of cultures, it can also create issues with their identity, and they may question 'Where is home?'

DISCUSS

What are the benefits of being a third culture kid?

What are the challenges of being a third culture kid?

In your class, ask everyone where they would identify as 'home'. Does anyone have problems answering this question? Does anyone consider themselves a third culture kid?

Watch: 'So Where's Home? A Film About Third Culture Kid Identity': **https://vimeo.com/41264088**

Read 'Am I rootless, or am I free? 'Third culture kids' like me make it up as we go along': **www.theguardian.com/commentisfree/2016/mar/09/third-culture-kid-identity-different-cultures**

Read 'Third Culture Kids: Citizens of everywhere and nowhere': **www.bbc.com/worklife/article/20161117-third-culture-kids-citizens-of-everywhere-and-nowhere**

Design situation

For this design challenge you are being given the opportunity to create a flag for TCKs to help them find a sense of 'home'. You can choose either of the following situations:

1 Design a flag that represents all TCKs.
2 Design a flag that represents an individual TCK.

If you chose the first situation, you will have to think about the themes and values that represent all TCKs. Can you create a flag that symbolizes how they feel and unite them?

If you chose the second situation, you will be designing for an individual. You should speak to a TCK and find out which countries have meaning to them, and see if you can unite those to create a flag for that individual.

ACTIVITY: TCK challenges

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Although you have already discussed with your classmates the possible benefits and challenges of being a TCK, you should now dig a little deeper. Either interview a TCK or look online to find out more about the experience of TCKs. Can you find out what problems and issues TCKs might face? How might not having one place to call home have a negative impact on them?

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (i).

IDENTITY IS KEY

When you have located the person or group you are designing for, you will need to do a few activities with them to better understand their identity. You might choose to work with your classmates, each gathering up information in different ways, then sharing your answers and analysing them individually.

Pick some of the following activities to help you learn more about your client(s). Before you begin, you might want to write a list of questions that you hope to have answered. You should **prioritize** these questions, then ask your client(s) any high-priority questions that are left unanswered after the activities.

WHO AM I?

Use the following questions, from Harvard's Project Zero Thinking Routines, to conduct an interview with your client(s).

- **Explore: Who are you? How has your identity developed?**
- **Connect: Who and what are you connected to (parents, friends, school, clubs, teams)?**
- **Identify: If you wanted others to know who you are, what would identify you? Do you have more than one identity?**
- **Belong: Where do you think you belong? Do you have a sense of belonging to more than one group or more than one place?**

ACTIVITY: 'Who are you?' interview

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Do a timed three-minute interview. Ask the interviewee: 'Who are you?' If they stop or pause, say 'Tell me more' or 'What makes you say that?' Do not start a conversation – your role is to *listen* and give small nudges if the person stops talking. This is a form of empathy interview in which you will hopefully get your interviewee to open up.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii and iii).

ACTIVITY: Identity charts

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Ask your client(s) to create an identity chart. This should be in the form of a mind map, with their name in the middle connected to words that represent their identity. This could include anything to do with nationality, hobbies, family, beliefs and more.

To take this a step further, you could ask the person to highlight the words that they think others would also connect with their identity. In another colour pen, they could add on words that they think others might assume about them.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii and iii).

GENERATE–SORT–CONNECT–ELABORATE

You can do this activity with the words your client(s) wrote in their identity chart, or ask them to write a new list.

- **Generate** a list of words that **describe** your identity.
- **Sort** your list according to how central or tangential they are. Place central ideas near the centre and more tangential ideas towards the outside of the page.
- **Connect** your ideas by drawing lines between ideas that have something in common. In a short sentence, **explain** how the ideas are connected.
- **Elaborate** on any of the ideas/thoughts you have written so far by adding new ones that expand, extend or add to your initial ideas.

ACTIVITY: Idea wall

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

If you want to gather ideas from multiple people, write some questions and post them in a public place. Write a description of the project along with some information about TCKs. You might leave sticky notes and pens so that people can leave their answers. If you do this in your school's entrance, parents and other visitors could leave their replies too. If you want to gather information from even more people, **present** the idea in your assembly or school newsletter.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii and iii).

ACTIVITY: The answers

ATL

- Collaboration skills: Listen actively to other perspectives and ideas

Write up the main answers from your client(s), and highlight any themes or topics that were repeated. With this key information, write up your ideas for your client(s), showing the themes that emerged, using evidence from their answers. Make sure you include information about the problem you are trying to solve, and how you will solve it. This can act as your design brief.

Assessment opportunities

- This activity can be assessed using Criterion A: Inquiring and analysing (ii and iii).

ACTIVITY: Developing ideas

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Before developing your ideas visually, it is a good idea to write down the main things you want your flag to achieve. What do you want to symbolize, and how will you know that it is successful? This will be the main specification you will use to **justify** the success of your flag at the end of this chapter.

While we can sometimes write out full specifications at this stage of a design project, you will still be gathering ideas through your initial sketches and may not be able to determine what will appear on the flag and what colours it will be yet. However, you can write specifications for the dimensions, materials and even the function at this stage.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (i).

How can we create the sense of home/belonging?

COLOUR–SYMBOL–IMAGE

After talking with your client(s), you now know a little more about their identity. Using the Colour–Image–Symbol thinking routine, gather some initial ideas.

Although you would normally put just one colour in the first box when doing this activity, for our flag design you can put up to three colours. Copy and complete Table 12.1 at least four times. Think of different colours, symbols and images that you could use to represent your client(s).

Colour	Symbol	Image
Why?	**Why?**	**Why?**

Table 12.1 What colours will you use in your flag?

Gather feedback on your ideas from your client(s). If you are designing for an individual, you can do a one-on-one interview, or email them to get their thoughts. For a group you could create a survey that has your ideas embedded, or ask them to do dot voting. For dot voting you would display your ideas in a public space, such as your classroom or foyer, then give the clients dot stickers that they can leave on their favourite idea – this is a great way to see which ideas are more popular. You can do this during a limited time, such as a small part of your lesson, or leave the images for a longer period of time, along with stickers, in a public space.

If you are making these digitally, you might want to use icons for the symbol. You can get great icons from **https://thenounproject.com** and **www.flaticon.com**



Figure 12.17 Colour theory can help you see what different colours represent as well as help you determine which colours can complement each other



Figure 12.18 Use this colour harmony chart, along with a colour wheel, to help you pick out colours that work well together; if you want analogous colours, pick three colours that appear next to each other on the wheel; if you want complementary colours, pick out colours that are opposite on the wheel

PRACTICE: Colour harmonies

ATL

- Information literacy skills: Process data and report results

Pick out one colour on the colour wheel in Figure 12.17, then work out which colours go with it to find the following harmonies:

- **analogous**
- **complementary**
- **triad**
- **tetrad**
- **split complementary**
- **square.**

ACTIVITY: Get sketching

ATL

- Creative-thinking skills: Use brainstorming and visual diagrams to generate new ideas and inquiries

Once you have found out which colours, symbols and images are most popular, it is time to consolidate these ideas into some initial flag sketches. Create your sketches either by hand or using a simple digital program such as Google Drawings. Remember to make a flag that is easy to understand, easy to remember and that symbolizes the beliefs and values of your client(s).

Once you have created your rough flags, gather more feedback from your client(s). Using the feedback, **explain** which idea(s) you will develop further and why. You will then want to develop your idea into a final sketch, before committing to fabric. This could be anything from a detailed sketch on paper to a graphic of your flag made using illustration software. It should look exactly how you want your final fabric flag to look.

Assessment opportunities

- This activity can be assessed using Criterion B: Developing ideas (ii).

ACTIVITY: Making a plan and making your flag!

ATL

- Communication skills: Organize and depict information logically

Before putting everything together, you should work out what type of stitching you will be using. If you are using a sewing machine, take a scrap of fabric and try out the different types of stitching the machine allows. If you are stitching by hand, take a scrap of fabric and practise different hand stitches. There are many different types, and tutorials can be found online on places like Pinterest, YouTube and Instructables.

When deciding on the stitching you will use, you should think about the appearance, but also how strong the stitches are. On the back of the flag you will want to sew a plain rectangle so that all your sewing work is hidden. This will be attached with no loose threads showing. You may want to learn how to do an invisible or ladder stitch for this. You will also want to reinforce the corners of your flag to make sure they stay strong. Think about how the flag will hang too – do you want a tube of fabric that a flag pole can go through, or maybe holes for rope to go through?

Before you start sewing your flag, you need to work out exactly how much time you will need. This should include setting up any equipment at the start of class, and tidying away at the end. You should work out which tools you will need to use, as well as the quantity of fabric. Allow more time than you think you need, in case things go wrong

or you need to make changes. Make a table, with the headings 'lesson', 'date', 'tasks' and 'materials/tools', as well as 'reflection' and 'photographs'. Be specific and use technical terms, such as the name of the stitches you are going to use and the exact colours of fabric and thread.

Fill in the 'reflection' and 'photographs' section during each lesson. In 'reflection' you can write about what went well, what went wrong and what changes you made and why. In the photographs section, you should include photographs to show all the steps of your progress. You could ask a classmate or teacher to take photographs showing you sewing. You should also take close-up photographs to show the high quality of your stitching.

Take a photograph of the final flag at the end of the process. You might wish to have it hung on a pole, or just hold it up yourself. Make sure the full flag is in the photograph and that it is well lit, so that the photograph shows the colours accurately.

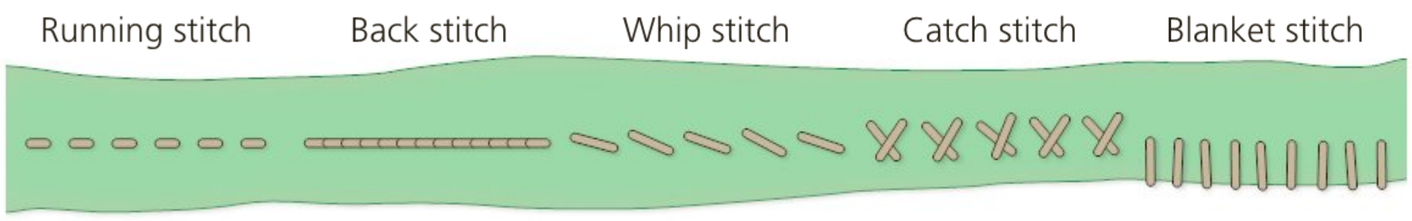


Figure 12.19 Different types of stitches

Assessment opportunities

- In this activity you have practised skills that are assessed using Criterion C: Creating the solution (i, ii, iii and iv).

Why do people want to belong to a physical place?

ACTIVITY: Flying the flag

ATL

- Collaboration skills: Give and receive meaningful feedback

Now that you have created your flag, you are ready to unveil it and fly it proudly! This will be a good time to gather feedback that provides evidence to prove you have met all your specifications and that your flag is successful.

If you have designed your flag for an individual person, you should gather detailed feedback from them, but you might also want to get feedback from other members of your community, including people who know your client.

If your flag is for a wider group of people, think about how you can display it to them. You could get it hung at school, display it in the lobby, showcase it in assembly, hang it in the design room, or even show it off in the school newsletter.

Think about what questions you should ask to gather feedback, and how. You could create questions to display with it, leaving space for people to add sticky notes with their comments. You might have dot stickers so that people can pick from a series of statements to say which best describes the flag. If you have designed for an individual, you might show it to a group of people to see if they can guess who it represents. There are many ways you can gather feedback – but try to make it interactive and fun so that people want to give you their time, as then they will give stronger feedback.

Remember, you don't just want to know what people like – you want to know *why* they like it. You want to know what they would change, how they would improve it and, most importantly, you want to know the impact it had on them.

Once you have gathered the feedback, use it to **explain** which specifications were met fully, met partially and not met at all. You might also use the feedback to explain how you think the flag could be improved.

◆ Assessment opportunities

- In this activity you have practised skills that are assessed using Criterion D: Evaluating (i, ii, iii and iv).

! Take action

- If your school has many flags displayed, consider asking them to fly the Flag for Human Rights as well as the Refugee Nation flag. Both of these can be purchased online.
- The Fly the Flag website has many useful resources for schools, including lots of information suitable for exploring human rights in a school assembly. Dive into these resources and see if this is something you could deliver at your school: **https://flytheflag.org.uk/schools**

Reflection

In this chapter you have thought about different types of communities, exploring often-marginalized groups. You have explored the importance of identity and how this can be reflected in different flags. Lastly, you designed a new flag for someone who may not have previously had one they connect with.

Use this table to evaluate and reflect on your own learning in this chapter.

Questions we asked	**Answers we found**	**Any further questions now?**
Factual: Who has no home? What groups of people do not have a flag? How are flags designed? What do flags symbolize to people?		
Conceptual: Why do people want to belong to a physical place? How can we create a sense of home/belonging?		
Debatable: Does where we come from impact who we are?		

Approaches to Learning you used in this chapter	**Description – what new skills did you learn?**	**How well did you master the skills?**			
		Novice	**Learner**	**Practitioner**	**Expert**
Communication skills					
Collaboration skills					
Information literacy skills					
Creative-thinking skills					

Learner profile attribute	Reflect on the importance of being open-minded for your learning in this chapter.
Open-minded	

Glossary

adaptive equipment Products that are designed for people with physical difficulties to help them to complete everyday tasks

aesthetics The characteristics, creation, meaning and perception of beauty and taste; the study of aesthetics develops skills for the critical appreciation and analysis of art, culture and nature

agreements Values, attitudes and actions that we, as a group, agree to take; think of them as a class contract

assistive technology Products that are designed for people with physical difficulties to help them to complete everyday tasks

audience see *target audience*

authentic test Tests that are relevant to the project; they should be completed by appropriate testers to gain high-quality quantitative and qualitative feedback

carbon footprint The greenhouse gas emissions different people, events, companies, products and services cause

client An individual, company or organization that commissions a designer to develop a solution to a particular design problem

culturally sensitive Being aware of how other people's cultures might impact their perspectives and values

deliverables The items you promise to your client; in addition to your final product you might promise your client different items along the way to show your design process, such as three different initial sketches followed by a detailed sketch; this allows the client to provide feedback throughout the design process

design brief The designer's response to the design situation; it summarizes the relevant findings from research, details how the designer intends to solve the problem, and informs the development of the design specification

design specification see *specification*

empathy The ability to understand and share the feelings of another person

ergonomics The application of scientific information and understanding of how humans relate to products, systems, interfaces and environment; designing and arranging things people use so that the people and things interact most efficiently and safely

expert appraisal Product testing that relies on the knowledge of an expert; this can include interviewing an expert, beta testing and consumer testing

exploded view A diagram showing all the parts of an object, as well as how they relate to each other

fair trade A trade arrangement designed to ensure producers in developing countries are paid fair prices

field test Product testing that tests the performance of a new product under the conditions in which it will be used; field tests normally focus on aspects of functionality, such as durability, robustness and suitability to its environment

food miles The distance that ingredients travel from where they were grown or raised to reach your plate

gashapon Vending machines that dispense toys in Japan; they are also known as 'gacha gacha pon', which is the noise of the knob being turned twice and the toy dropping out of the hatch

high resolution (hi-res) At a large enough size to see all of the details

ideation Coming up with ideas or concepts

isometric projection Shows how the object actually looks to the human eye

kaiju From the Japanese word for 'strange beast'; usually refers to monsters seen in Japanese films, including Godzilla, Mothra and King Ghidorah

kinkeshi Small toy erasers that were very popular in Japan

layers In illustration software, layers are like sheets of stacked acetate – you can see through transparent areas to the layers below, move and edit individual layers, and change their opacity

local Close to where you live or have lived

maquette A small model made by a sculptor

mood board A collection/collage of ideas and inspiration, usually photographs and colour swatches

organic Produced without the use of chemical fertilizers or pesticides

orthographic projection Shows each side of an object individually rather than how it appears to the human eye

palm oil-free A product that does not contain palm oil; the production of palm oil is linked to the destruction of the rainforest habitat of orangutans

performance test An evaluation of the actual performance of a product within the task or learning objective using the conditions under which it will be performed and the absolute standard for acceptable performance

personified To give human characteristics to something non-human; many art toys are personified animals or fictional creatures

pescatarian A person who does not eat meat but does eat fish

pitch When you present your ideas and research to a client, often using persuasive language

primary source A first-hand or eyewitness account of information by an individual close to the topic

prototype An early or first draft or model of a design, based on the specifications; it is used to check that the design works

secondary source A source that is more removed from an event, usually written after the event has happened

sketching Rough layouts or drawings used to show ideas

sofubi Soft vinyl toys usually made in Japan

specification A detailed description of the conditions, requirements and restrictions with which a design must comply; a precise and accurate list of facts, such as conditions, dimensions, materials, process and methods, that are important for the designer and the user

stance The attitude of a person or organization towards something

sustainable The ability to meet our needs without compromising the ability of future generations to meet their needs

target audience A group of similar users who require a solution to a common problem or a product that fills a common need or want

tifo Any flag, sign or banner created by a team's supporters club and shown in a stadium

ultras A football club's most passionate supporters

user trial Product test carried out by allowing the target market to interact with the product/solution; the observation of people using a product and the collection of comments from people who have used it; user trials normally focus on usability and intuitive interaction

vegan A person who does not eat any food derived from animals

vegetarian A person who does not eat meat

Venn diagram A chart that shows relationships between different pieces of information

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